



FACTORS ASSOCIATED WITH WORKPLACE ACCIDENTS AMONG HEALTH WORKERS AT THE UPTD UEESI COMMUNITY HEALTH CENTER, EAST KOLAKA REGENCY, 2024

Azhar Jamil¹, Andi Alim², Andi Alim, Achmad R. Muttaiqien Al-Maidin³

Faculty of Public Health, Mega Buana University Palopo

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CORRESPONDENCE

Phone: 082293294272

Email: asharjami954@gmail.com

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ABSTRACT

Background: Occupational health refers to a series of efforts undertaken by an organization to maintain and enhance the physical, mental, and social well-being of its employees. In primary healthcare settings such as community health centers (puskesmas), workplace accidents are often attributed to human error, including a lack of attentiveness while performing tasks and the failure to use personal protective equipment properly. This study aims to examine the influence of the work environment, knowledge level, attitude, and the implementation of occupational health and safety (OHS) regulations on the performance and safety of healthcare workers at the UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024. **Method:** A cross-sectional study design was employed. Bivariate analysis using the Mann-Whitney test was conducted to assess whether there is a statistically significant association between variables measured on an ordinal scale. **Result:** The analysis revealed no statistically significant association between variables such as length of service, knowledge level, attitude, or working environment and the occurrence of workplace accidents. The Mann-Whitney test yielded an Asymp. Sig. (2-tailed) value greater than 0.05, indicating no meaningful relationship between the variables examined in this study. **Conclusion:** The findings suggest that there is no significant relationship between the analyzed variables and the incidence of workplace accidents among healthcare workers at UPTD Puskesmas Ueesi. These results imply the possible presence of other contributing factors not examined in this study, warranting further research to gain a more comprehensive understanding.

INTRODUCTION

Occupational health reflects the overall strategies implemented by an institution to ensure and improve the well-being of its workforce, encompassing physical, mental, and social aspects. Its objective is to create working conditions that support productivity and the well-being of individuals while carrying out their duties. In the continuously evolving era of globalization, the implementation of occupational health and safety (OHS) has become a crucial element that must not be overlooked in all work sectors, whether in enclosed or open areas. The implementation of occupational health and safety (OHS) is an essential part of protecting workers from various work-related risks that may compromise their safety and health during activities. According to the provisions stated in Article 23 of Law No. 23 of 1992 on Health, every work environment that poses potential risks to workers' health must implement an occupational health and safety (OHS) program. (Zulfikaretal., 2022)

According to information from BPJS Ketenagakerjaan, the number of occupational accidents in Indonesia has shown a significant increase over the past few years. In 2019, 114,000 cases were recorded, rising to 177,000 in 2020, an increase of more than 55%. By September 2021, the number of occupational accident incidents reached 82,000, while cases of work-related illnesses totaled 179, with an estimated 65% of these cases directly related to COVID-19 infection.. (BPJS

Ketenagakerjaan, 2021). According to the 2018 Basic Health Research (Riskesdas), the incidence of occupational accidents in public areas such as hospitals remains relatively high. At the national level, the percentage of incidents is recorded at 9.2%. This figure is slightly higher than in North Sulawesi Province, which stands at 8.3%, and significantly above the rate in Kotamobagu City, which only reaches 5%. (Kemenkes RI, 2018).

Salmawati (2019) studied the factors influencing occupational accident cases experienced by healthcare workers in the Emergency Room of Anutapura General Hospital, Palu City. The study results indicated a significant relationship between healthcare workers' age, consistency in using personal protective equipment (PPE), adherence to safety regulations, the quality of training provided, and the effectiveness of field supervision with the frequency of occupational accidents

Research conducted by Dwiari (2020) revealed that the implementation of hospital occupational health and safety (OHS) at Denpasar General Hospital is significantly associated with staff attitudes as well as the availability of facilities and infrastructure ($p < 0.05$). A similar study by Latuconsin et al. (2019) also found that employee attitudes and knowledge significantly influence the occurrence of occupational accidents at PT. Maruki International Indonesia ($p < 0.05$).

According to the 2023 profile data of UPTD Puskesmas Ueesi, there are 45 healthcare workers assigned to the health center. Over the past three years, from 2021 to 2023, several occupational accident cases involving healthcare workers have been recorded. In 2021, 5 accident cases were reported, followed by 7 cases in 2022, and increasing to 10 cases in 2023. Based on interviews with the head of the health center, discrepancies were found between the actual number of occupational accidents and the number reported by healthcare workers. Although most healthcare staff understand the importance of occupational safety, the rate of work-related accidents in the healthcare sector remains high. One contributing factor is the use of personal protective equipment (PPE), such as gloves, which can interfere with the efficiency of healthcare workers.

At community health centers (Puskesmas), occupational accidents are often triggered by staff negligence. Lack of alertness while working and incomplete use of personal protective equipment (PPE) are factors that can lead to workplace accidents. Additionally, an unbalanced workload can cause physical and mental fatigue, which in turn reduces concentration and increases the likelihood of accidents. Based on these issues, this study is aimed at examining the influence of the work environment, knowledge, attitudes, and compliance with occupational health and safety (OHS) regulations on the safety of

healthcare workers at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024. .

METHODS

This study employed a quantitative method, focusing on the collection of numerical data and statistical analysis to empirically test hypotheses. Unlike the qualitative approach, which is exploratory and in-depth, the quantitative method aims to obtain findings that can be generalized. The study adopted a cross-sectional design and used the Mann-Whitney test to evaluate the presence of significant relationships. Ordinal data were used in the statistical analysis to examine the association between independent and dependent variables

RESULTS

Data were collected through the distribution of questionnaires to 45 respondents. All healthcare workers working at UPTD Puskesmas Ueesi, East Kolaka Regency, were included as the sample in this study.

Tabel 1. Analysis of the Relationship and Cross-Tabulation Between Length of Service and Work Accidents Among Health Workers at Ueesi Community Health Center, East Kolaka Regency, in 2024

Korutaka Regency, in 2021							
Length of Service	Work Accident				Total		p value
	Experienced an accident		Did not experience an occupational accident				
	n	%	n	%	n	%	
< 3 Tahun	6	13.3	11	24.4	17	37.8	0,465
>3 Tahun	7	15.6	21	46.7	28	62.2	
Total	13	28.9	32	71.1	45	100	

Table 1 shows that a p-value of 0.465 was obtained through statistical testing, which exceeds the threshold value of 0.05. Based on the test results, it can be concluded that the null hypothesis (H0) is retained, and the alternative hypothesis (H1) is not supported. This indicates that there is no significant relationship between the length of service of healthcare workers and the occurrence of occupational accidents at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

Table 1 also presents the incidence of occupational accidents based on length of service. Of the 45 healthcare workers, 6 individuals (13.3%) with less than 3 years of service experienced accidents, while 11 individuals (24.4%) in this group did not experience any accidents. Among workers with more than three years of service, 7 respondents (15.6%) experienced occupational accidents, and 21 individuals (62.2%) did not

Tabel 2 Analysis of the Relationship and Cross-Tabulation Between Knowledge and Occupational Accidents Among Healthcare Workers at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

Knowledge	Work Accident						p value
	Experienced an accident		Did not experience an occupational accident		Total		
	n	%	n	%	n	%	
Good	5	11.1	16	35.6	21	46.7	0,659
Fair	7	15.6	12	26.7	19	42.2	
Poor	1	2.2	4	8.9	5	11.1	
Total	13	28.9	32	71.1	45	100	

The results of the relationship analysis presented in Table 2 show that the p-value obtained from the Mann-Whitney test is 0.659, which is greater than 0.05. Thus, the null hypothesis (H0) is accepted, while the alternative hypothesis (H1) is rejected, indicating that there is no significant relationship between healthcare workers' knowledge and the occurrence of occupational accidents at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

Based on Table 2, which presents the cross-tabulation between knowledge and occupational accidents among healthcare workers, out of 45 respondents: healthcare workers with good knowledge who experienced accidents numbered 5 (11.1%), while 16 (35.6%) did not experience accidents; those with adequate knowledge who experienced accidents numbered 7 (15.6%), and 12 (26.7%) did not experience accidents. There was one healthcare worker (approximately 2.2%) with insufficient knowledge who experienced an occupational accident, and among those with limited knowledge, 4 respondents (8.9%) did not experience any accident.

Tabel 3 Analysis of the Relationship and Cross-Tabulation Between Attitudes and Occupational Accidents Among Healthcare Workers at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024

Attitude	Work Accident						p value
	Experienced an accident		Did not experience an occupational accident		Total		
	n	%	n	%	n	%	
Good	5	11.1	16	35.6	21	46.7	0,745
Fair	6	13.3	9	20.0	15	33.3	
Poor	2	4.4	7	15.6	9	20.0	
Total	13	28.9	32	71.1	45	100	

The results of the Mann-Whitney test presented in Table 3 show a p-value of 0.745, which is higher than the threshold value of 0.05. Based on these results, the null hypothesis (H0) is accepted, while the alternative hypothesis (H1) is rejected, indicating that there is no significant relationship between healthcare workers' attitudes and occupational accidents at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

According to Table 3, which presents the statistical test results of attitudes and occupational accidents among healthcare workers, out of 45 respondents: healthcare workers with good attitudes who experienced accidents numbered 5 (11.1%), while 16 (35.6%) did not experience accidents; those with adequate attitudes who experienced accidents numbered 6 (13.3%), and 9 (20%) did not experience accidents. Among healthcare workers with poor attitudes, 2 (4.4%) experienced accidents, while 7 (15.6%) did not experience any accidents.

Tabel 4 Analysis of the Relationship and Cross-Tabulation Between the Work Environment and Occupational Accidents Among Healthcare Workers at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

Work Environment	Work Accident				Total		p value
	Experienced an accident		did not experience an occupational accident				
	n	%	n	%	n	%	
Good	4	8.9	6	13.3	10	22.2	0,438
Moderately Comfortable	5	11.1	14	31.1	19	42.2	
Uncomfortable	4	8.9	11	24.4	15	33.3	
Very Uncomfortable	0	0	1	2.2	1	2.2	
Total	13	28.9	32	71.1	45	100	

The analysis in Table 4 shows that the Mann-Whitney test yielded a p-value of 0.438, indicating that the result is not statistically significant. Therefore, the null hypothesis (H_0) is accepted, and the alternative hypothesis (H_1) is rejected. This means that no significant relationship was found between the work environment and occupational accidents among healthcare workers at UPTD Puskesmas Ueesi, East Kolaka, in 2024.

Based on Table 4, which presents the relationship between work environment factors and occupational accidents analyzed through cross-tabulation, out of 45 respondents: healthcare workers in a good work environment who experienced accidents numbered 4 (8.9%), while 6 (13.3%) did not experience accidents. Among those working in a fairly comfortable environment, 5 (11.1%) experienced accidents, while 14 (31.1%) did not. In the group of healthcare workers in a less comfortable environment, 4 (8.9%) experienced occupational accidents, and 11 (24.4%) did not. In a very uncomfortable work environment, 2.2% of respondents, that is, one healthcare worker, reported never experiencing an occupational accident.

Tabel 5 Analysis of the Relationship and Cross-Tabulation Between Occupational Health and Safety (OHS) Regulations and Occupational Accidents Among Healthcare Workers at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

OF PD Puskesmas Ceesi, East Roraka Regency, in 2021.							
Implementation Of Occupational Health and Safety Regulations	Work Accident				Total		p value
	Experienced an accident		Did not experience an occupational accident				
	n	%	n	%	n	%	
Good	0	0	1	2.2	1	2.2	0,062
Fair	3	6.7	15	33.3	18	40.0	
Poor	6	13.3	12	26.7	18	40.0	
Very Poor	4	8.9	4	8.9	8	17.8	
Total	13	28.9	32	71.1	45	100	

Referring to Table 5, the data analysis using the Mann-Whitney test yielded a p-value of 0.062, which exceeds the significance threshold of 0.05. This finding indicates that there is no statistically significant effect of occupational health and safety (OHS) regulations on the occurrence of occupational accidents among healthcare workers at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

Based on Table 5, which presents the cross-tabulation between the implementation of OHS regulations and occupational accidents among healthcare workers, the results show: healthcare workers with good implementation of OHS regulations who did not experience accidents numbered 1 (2.2%), those with adequate implementation who experienced accidents numbered 3 (6.7%), and those with adequate implementation who did not experience accidents numbered 15 (33.3%). Out of the total respondents, only 6 (13.3%) experienced occupational accidents despite implementing OHS regulations. Among healthcare workers in a less comfortable work environment, 12 (26.7%) did not experience accidents. Four healthcare workers (8.9%) experienced accidents even though their implementation of OHS regulations was minimal, while in the group with adequate OHS implementation, 4 respondents (8.9%) did not experience occupational accidents.

DISCUSSION

1. Relationship Between Length of Service and Occupational Accidents Among Healthcare Workers at UPTD Puskesmas Ueesi in 2024

The Mann-Whitney test conducted showed a p-value of 0.465, indicating that the value is

greater than the significance level of 0.05.

Based on the analysis, it can be concluded that the length of service does not have a statistically significant relationship with the incidence of occupational accidents among healthcare workers at UPTD Puskesmas Ueesi, East Kolaka.

This finding is consistent with previous relevant research by Muh Rasul et al. (2017), which aimed to identify factors related to occupational accidents experienced by nurses in the Emergency Room of Anutapura General Hospital, Palu City. The study found that length of service did not significantly influence the occurrence of occupational accidents, as indicated by a p-value of 0.083. The results align with data from Anutapura General Hospital, showing that among staff with less than 3 years of service, 6 respondents (85.7%) experienced occupational accidents and 1 respondent (14.3%) did not. Meanwhile, among staff with more than 3 years of service, 10 respondents (41.7%) experienced occupational accidents, and 14 respondents (58.3%) did not.

The researcher concluded that there is no correlation between the duration of service and the likelihood of experiencing occupational accidents. It was also concluded that the length of service does not affect the incidence of occupational accidents, as both experienced and new staff have a similar probability of experiencing accidents.

2. Relationship Between Knowledge and Occupational Accidents Among Healthcare Workers at UPTD Puskesmas Ueesi in 2024

The relationship analysis, based on the Mann-Whitney test, yielded a p-value of 0.659 (> 0.05), indicating that H1 is rejected and H0 is accepted. This means that there is no

significant relationship between knowledge and occupational accidents among healthcare workers at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

Based on the results obtained, it can be concluded that this finding is consistent with the study conducted by Brela Andreana Motulo et al. (2022) titled *"The Relationship Between Knowledge and Attitudes Toward Occupational Accidents Among Nurses at Anugerah Hospital, Tomohon."* In that study, the chi-square test showed a p-value of 0.192 (> 0.05), indicating that nurses' level of knowledge was not significantly related to the occurrence of needle-stick accidents at Anugerah Hospital, Tomohon. The findings are also in line with previous research data, where among 104 respondents, 72 (70%) with good knowledge did not experience occupational accidents, while 31 (30%) with good knowledge did experience accidents.

According to the researcher's interpretation, this study suggests that the level of understanding regarding occupational health and safety (OHS) does not have a significant association with the occurrence of workplace accidents. This may be because some healthcare workers have adequate knowledge of OHS, reducing their potential risk of experiencing accidents.

The study also revealed that some healthcare workers in the Puskesmas environment still do not fully understand the risks of occupational accidents. Despite the clear objectives and benefits of OHS

implementation, limited comprehension in its application leaves staff exposed to accident risks while performing their duties

3. Relationship Between Attitudes and Occupational Accidents Among Healthcare Workers at UPTD Puskesmas Ueesi in 2024

Based on the statistical analysis presented in the table, the Mann-Whitney test yielded a p-value of 0.745, which exceeds the significance threshold of 0.05. Therefore, no significant relationship was found between healthcare workers' attitudes and occupational accidents at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

This finding is consistent with previous research by Muharani (2019), which focused on analyzing factors suspected to influence occupational accidents in the production unit of the Adolina Palm Oil Factory owned by PTPN IV in Serdang Regency. That study revealed that workers' attitudes did not have a statistically strong relationship with the occurrence of occupational accidents, as evidenced by a p-value of 0.575 (> 0.05). The study concluded that, in theory, workers understand the attitudes they should adopt to prevent and control workplace accidents. However, no significant correlation was found between attitudes and occupational accidents, highlighting the importance of providing additional guidance on effective measures to prevent accidents in the workplace.

4. Analysis of the Relationship Between Work Environment Conditions and Occupational Accidents Among Healthcare Workers at UPTD Puskesmas Ueesi in 2024

Based on the Mann-Whitney test, the analysis yielded a p-value of 0.438, exceeding the significance threshold of 0.05. This indicates that there is no significant correlation between work environment conditions and occupational accidents among healthcare workers at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

According to research by Ida Bagus et al. (2020) titled *"The Effect of Work Environment on Nurse Performance at Siloam Bali Hospital,"* the hospital management successfully implemented work environment theory according to its dimension indicators, demonstrating that the work environment at the hospital was considered good.

As stated by Kasmir (2012:13), the work environment includes various physical and non-physical aspects surrounding an individual while performing tasks. It can influence how employees carry out their duties. A comfortable work environment can enhance performance, whereas unsupportive conditions, such as poor air quality, may slow work and hinder goal achievement. Therefore, a good work environment is crucial because it not only provides comfort but also reduces the risk of accidents. The results of this study indicate that most respondents felt their work environment was fairly comfortable.

5. Relationship Between the Implementation of Occupational Health and Safety (OHS) Regulations and Occupational Accidents Among Healthcare Workers at UPTD Puskesmas Ueesi in 2024

Based on Table 5, the relationship analysis using the Mann-Whitney test yielded a p-value of 0.062 (> 0.05), indicating that there is no statistically significant effect of work environment conditions on occupational accidents among healthcare workers at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024.

This finding aligns with the results of Hanna Ilke et al. (2021), which showed a chi-square test p-value of 0.789 ($p > 0.05$), indicating no significant relationship between the implementation of OHS regulations and occupational accidents. The study revealed similar results: among 37 workers with good OHS implementation, 12 (32.4%) still experienced occupational accidents, while among those with low OHS implementation, 8 out of 37 workers (26.7%) also experienced accidents.

The study concludes that effective implementation of OHS regulations contributes to reducing occupational accidents. When individuals are aware of the importance of applying OHS regulations, they become more cautious and attentive to safety while performing their duties.

CONCLUSION

Based on the results of the study involving 45 respondents at UPTD Puskesmas Ueesi, East Kolaka Regency, in 2024, no significant correlation was found between length of service, knowledge of occupational safety, and attitudes toward the likelihood of occupational accidents. The risk of accidents appeared similar among staff with different lengths of service as well as among those with varying levels of knowledge and attitudes toward workplace safety.

However, the work environment was shown to have a positive influence in minimizing accidents. A well-maintained environment with proper ventilation, lighting, and equipment arrangement can enhance comfort and work focus. In addition, the effective implementation of occupational health and safety (OHS) regulations plays an important role in reducing the risk of workplace accidents. The better the OHS regulations are applied, the lower the incidence of accidents among healthcare workers.

RECOMMENDATIONS

Based on the conclusions above, several recommendations are proposed:

1. For healthcare workers: It is recommended to consistently practice safe work procedures, use personal protective equipment (PPE) fully and properly, and continuously improve knowledge related to occupational health and safety (OHS).

2. For institutions, particularly UPTD Puskesmas Ueesi, East Kolaka Regency: Routine supervision and evaluation of OHS implementation should be conducted, supportive facilities should be adequately provided, and regular seminars or training sessions should be organized to enhance healthcare workers' knowledge and attitudes toward OHS.

3. For future researchers: It is suggested to include additional variables that may influence work performance and to employ different research methods and subjects to strengthen the findings and explore the relationships between the studied variables.

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