

ORIGINAL ARTICLE

Knowledge and Attitude of Nurses Toward Occupational Hazards and Safety Practices at Kasama General Hospital, Kasama, Zambia

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ABSTRACT

Background: Occupational health and safety (OHS) is a crucial element of nursing practice, ensuring a safe working environment for healthcare professionals. Despite the existence of OHS guidelines, adherence among nurses remains a challenge. This study aimed to assess the knowledge and attitudes toward OHS practices among nurses at Kasama General Hospital.

Methods: A cross-sectional analytical study design was employed, with a sample size of 177 nurses systematically selected from a total of 350 nurses. Data was gathered using a structured self-administered questionnaire and analysed using SPSS version 22.0. Chi-square tests and binary logistic regression were utilized to examine associations.

Results: The majority (64.4%) were female, with a median age of 33 years (IQR: 29.0–41.0), and 41.2% were aged 31–41 years. Most participants (58.8%) were married. Forty-one percent held a diploma in nursing/midwifery, and 77.8% had 1–11 years of work experience, with a median of 7 years (IQR: 3.5–10.0). Most (77%) demonstrated good knowledge of OHS, 60% exhibited positive

attitudes, and 51% reported good OHS practices. Profession significantly influenced knowledge and attitudes toward occupational hazards and safety practices (AOR: 3.38; 95% CI: 1.04 – 10.96; $p = 0.042$).

Conclusion: While nurses exhibited strong knowledge and generally positive attitudes toward OHS, safety practices were suboptimal. Institutional support and availability of resources are critical for improving adherence.

INTRODUCTION

Occupational health and safety (OHS) is one of the most important aspects of concern in the health care system. Healthcare workers (HCWs) such as nurses operate in an environment that is considered to be one of the most hazardous occupational settings. Occupational hazards include biological, chemical, physical, ergonomic, psychosocial, fire and explosion, and electrical hazards that threaten HCWs' lives, safety, and well-being.

It is estimated that about 100,000 people die from occupational illnesses, while about 400,000 new

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cases of occupational diseases are diagnosed every year. Previous studies have shown that occupational injuries and illnesses among nurses ranked among the highest in any industry, though they could be reduced or eliminated.

The vulnerability of HCWs in healthcare facilities to occupational hazards is compounded by the unavailability of appropriate protective equipment and failure to observe basic safety and hygiene guidelines. Adamopoulos and Syrou a study in Greece, risks are heightened by inconsistent application of occupational safety standards, which persist despite the existence of clear guidelines, and a study in Nigeria found that some healthcare workers lacked practical awareness of safety protocols. Additionally, poor knowledge and negative attitude towards occupational safety, as the study of Faller et al. in the Philippines revealed that those who were knowledgeable were able to implement the safety protocols, another, study in Nigeria found that, although the participants were aware of the guidelines, their attitudes towards using such as personal preventive equipment was poor.

In sub-Saharan Africa, resources to institute safety measures are lacking, increasing the risk of occupational exposure to these hazards among HCWs. This has led to the high occurrence of occupational hazards among HCWs. Despite the increased presence of occupational hazards among HCWs and their mitigation measures remain scarce in Zambia. Additionally, the knowledge and attitude of nurses toward occupational hazards and safety are unknown. Therefore, a combination of education, training, a positive safety culture, and adherence to regulations is crucial for enhancing both the knowledge and attitude of nurses towards occupational health hazards and safety practices. Anecdotal reports from Kasama General Hospital suggest that nurses are exposed to various occupational hazards. Over the past three years at KGH, occupational health hazards among nurses have significantly increased. In 2021, out of 78 nurses surveyed, 36% reported needle stick injuries, 15% cuts or lacerations, and 49% infections such as

HIV, COVID-19, and tuberculosis. In 2022, with 62 nurses surveyed, these figures rose to 50%, 21%, and 29%, respectively. By 2023, among 59 nurses surveyed, 58% reported needle stick injuries, 25% cuts or lacerations, and 17% infections. This trend highlights potential gaps in occupational health and safety (OHS) practices at KGH, posing immediate health risks to nurses and broader consequences, including psychological stress, increased absenteeism, disrupted hospital operations, higher healthcare costs, and potential community health impacts. This study was therefore done to assess nurses' knowledge of OHS practices, evaluate adherence to safety protocols, understand attitudes towards OHS, and identify barriers to effective safety measures.

METHODS

A cross-sectional analytical study design was employed to evaluate the knowledge, attitudes, and practices of nurses towards occupational health hazards and safety at Kasama General Hospital (KGH), Northern Province, Zambia.

The study targeted all nurses, all full-time nurses who had worked for more than six months at the hospital. Nurses who were on any form of leave, such as sick, annual, and maternity were excluded from the study. At the time of the study, the hospital had 350 nurses. The sample size of 183 was determined using Cochran's formula for a single population proportion, with a 95% confidence level and 5% margin of error. A systematic random sampling was used to select nurses at an interval of every 2nd from the staff list of the hospital.

Data was collected using a structured self-administered questionnaire adapted from instruments developed by Aladini et al. A pilot study involving 18 nurses at Mbala General Hospital was conducted to test the questionnaire. The tool demonstrated good reliability, with a Cronbach's alpha of 0.83. Minor wording and structural adjustments were made based on participant feedback.

Statistical Packages for Social Sciences (SPSS) version 22.0 was used for data analysis. Descriptive

statistics (frequency table and bar graph) were used to summarize the data. The Pearson Chi-square test was employed to assess associations between categorical variables, such as knowledge and attitudes, and occupational health and safety (OHS) practices. Fisher's Exact test was used. Additionally; a binary logistic regression model was used. P-value of 0.05 and 95% confidence interval were used.

Ethics clearance was sought from the University of Zambia Biomedical Research Ethics Committee (UNZABREC). Permission to proceed with the study was also well be obtained from the National Health Research Authority (NHRA), Kasama Provincial Health Office, Mbala General Hospital, and Kasama General Hospital. During the study process, the researcher upheld the principles of ethical conduct in research: justice, beneficence, and respect for human dignity and written informed consent was obtained.

RESULTS

Socio-demographic characteristics

Table 1: Socio-demographic characteristics (n=177)

Variables	Frequency (n)	Percentage (%)
Age range		
20-30	62	35.0
31-41	73	41.2
42 and above	42	23.7
	Median (IQR)	33.0 (29.0-41.0)
Total	177	100
Work experience range		
1-10	137	77.8
11-21	35	19.9
22 and above	4	2.3
Work experience	Median (IQR)	7.0(3.5-10.0)
Total	177	100

Sex		
Male	63	35.6
Female	114	64.4
Total	177	100
Marital Status		
Single	65	36.7
Married	104	58.8
Divorced	5	2.8
Widowed	3	1.7
Total	177	100
Highest qualification		
Certificate	25	14.1
Diploma	75	42.4
Bachelor's	67	37.9
Masters'	10	5.6
Total	177	100
Profession		
Registered nurse	98	55.4
Nurse Midwife	41	23.2
Nurse educator	19	10.7

Table 1 shows that most of the respondents were female, were aged between 31-41 years, and most of them were married. The majority had attained a diploma qualification in nursing or midwifery, and most had worked for less than eleven years.

Knowledge of OHS

Table 2: Knowledge of OHS practices (n=177)

Questions	Category	n (%)
Workplace accidents are more likely to happen in hazardous industries, such as construction, than in hospitals.	Yes	64 (36.2)
	No	113 (63.8)
All healthcare workers are required by law to wear personal protective equipment while undertaking hazardous tasks.	Yes	125 (70.6)
	No	52 (29.4)
Occupational hazards can only be physical.	Yes	74 (41.8)
	No	103 (58.2)
Exposure to chemical hazards is a significant risk for healthcare workers in hospitals.	Yes	130 (73.4)
	No	47 (26.6)
Every healthcare facility must have a health and safety committee to assess and manage risks.	Yes	115 (65.0)
	No	62 (35.0)
Healthcare workers have the right to refuse to work in environments they believe are unsafe, without fear of losing their jobs.	Yes	111 (62.7)
	No	66 (37.3)
It is mandatory to report all workplace accidents and injuries to the health and safety department.	Yes	113 (63.8)
	No	64 (36.2)
Health and safety training is required only when new hazards are introduced in the healthcare facilities.	Yes	128 (72.3)
	No	49 (27.7)
The Ministry of Health is responsible for providing adequate first aid facilities in healthcare facilities.	Yes	114 (64.4)
	No	63 (35.6)

Table 2 shows that most of the respondents stated that workplace accidents are more common in hazardous industries like construction than in hospitals. Awareness of PPE regulations was high, with most of the respondents acknowledging that all healthcare workers are legally required to wear PPE when performing hazardous tasks. More than half of the respondents reported that hazards are not only physical, recognizing other types such as biological and chemical risks. Additionally, nurses identified chemical exposure as a significant risk for healthcare workers. Most of the respondents stated that every healthcare facility must have a health and safety committee responsible for assessing and managing risks.

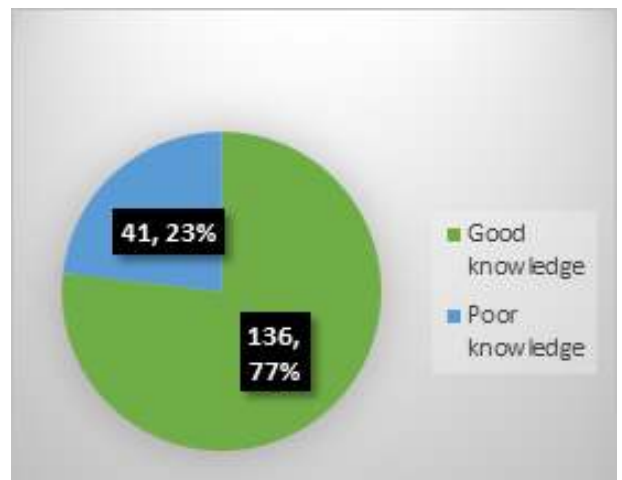


Figure 1: Knowledge of OHS

Figure 1 above shows that most of the respondents had good knowledge of OHS practices.

Attitude towards OHS

Table 3 shows that the majority of the respondents disagreed that ensuring a safe working environment is solely the responsibility of management. A significant proportion of the respondents agreed that regularly following OHS guidelines can significantly reduce workplace injuries. Regarding PPE, most of the respondents disagreed that PPE is uncomfortable and unnecessary for all nursing tasks. On the importance of reporting minor incidents or near misses, more than half disagreed that such reports are unnecessary.

When asked whether regular health and safety training is essential for a safe working environment,

most disagreed. A small percentage of respondents stated that adhering to OHS practices increases workload and interferes with patient care. Less than half of the respondents agreed that nurses should actively participate in identifying and addressing workplace hazards. Thirty-five percent of the respondents mentioned that they were confident in managing occupational hazards. Close to half of the respondents disagreed that OHS regulations are more relevant to other professions than nursing. Finally, less than half agreed that management's commitment to OHS influences nurses' willingness to follow safety guidelines.

Table 3: Attitude towards OHS (n=177)

Questions	Category	n (%)
Ensuring a safe working environment is the sole responsibility of the management.	Agree	41(23.2)
	Disagree	124(70.1)
	Not sure	12(6.8)
Following OHS guidelines regularly can significantly reduce the risk of workplace injuries.	Agree	162(91.5)
	Disagree	7(4.0)
	Not sure	8(4.5)
Wearing personal protective equipment (PPE) is uncomfortable and not necessary for all nursing tasks.	Agree	46(26.0)
	Disagree	95(53.7)
	Not sure	36(20.3)
Reporting minor incidents or near misses is not important, as they don't cause serious harm.	Agree	31(17.5)
	Disagree	119(67.2)
	Not sure	27(15.3)
Regular health and safety training for nurses is essential for maintaining a safe working environment.	Agree	49(27.7)
	Disagree	94(53.1)
	Not sure	34(19.2)
Adhering to OHS practices increases workload and interferes with patient care.	Agree	65(36.7)
	Disagree	112(63.3)
Nurses should actively participate in identifying and addressing potential hazards in the workplace.	Agree	74(41.8)
	Disagree	52(29.4)
	Not sure	51(28.8)
I feel confident in addressing and managing occupational hazards in my workplace.	Agree	62(35.0)
	Disagree	63(35.6)
	Not sure	52(29.4)
Occupational health and safety regulations are more applicable to other professions than to nursing.	Agree	44(24.9)
	Disagree	86(48.6)
	Not sure	47(26.6)
Management's commitment to OHS influences nurses' willingness to follow safety guidelines.	Agree	88(49.7)
	Disagree	50(28.2)
	Not sure	39(22.0)

Figure 2. Shows that most of the respondents had a positive attitude towards OHS.

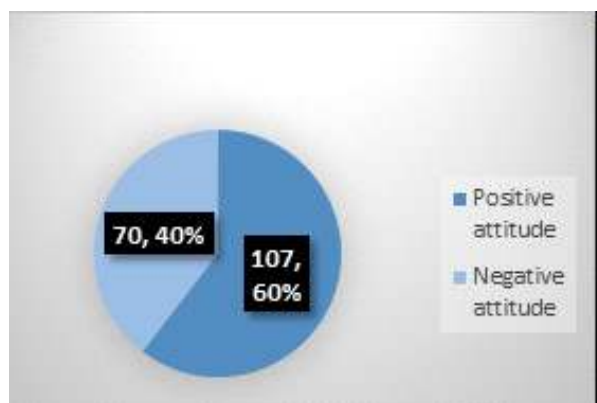


Figure 2: Attitude levels towards OHS

Practice of OHS

Table 4: Practices of OHS (n=177)

Questions	Category	n (%)
I regularly follow safety protocols such as wearing personal protective equipment (PPE) during patient care.	Agree	113 (63.8)
	Disagree	64 (36.2)
I feel well-trained to identify and manage occupational hazards in the workplace.	Agree	67 (37.9)
	Disagree	110 (62.1)
There is adequate supervision to ensure that safety guidelines are followed in my workplace.	Agree	66 (37.3)
	Disagree	111 (62.7)
I believe occupational health hazards are a serious concern for nurses in all healthcare settings.	Agree	115 (65.0)
	Disagree	62 (35.0)
I regularly report any incidents or near-misses related to occupational hazards in my workplace.	Agree	99 (55.9)
	Disagree	78 (44.1)
The hospital provides sufficient training on occupational health hazards and safety practices.	Agree	84 (47.5)
	Disagree	93 (52.5)
My workload affects my ability to follow safety guidelines consistently.	Agree	110 (62.1)
	Disagree	67 (37.9)
Management ensures that all necessary resources, such as PPE, are available to reduce occupational hazards.	Agree	74 (41.8)
	Disagree	103 (58.2)
Regular occupational health and safety training sessions improve nurses' ability to handle workplace hazards.	Agree	54 (30.5)
	Disagree	123 (69.5)
I actively participate in risk assessments to identify potential workplace hazards in my department.	Agree	116 (65.5)
	Disagree	61 (34.5)
Fatigue or stress often affects my adherence to occupational safety practices.	Agree	99 (55.9)
	Disagree	78 (44.1)

Table 4 shows that a majority of the respondents agreed that they regularly follow safety protocols, such as wearing personal protective equipment (PPE) during patient care. However, concerns about workplace training were evident, as more than half of the respondents disagreed that they feel well-trained to identify and manage occupational hazards. Similarly, more than half disagreed that there is adequate supervision to ensure compliance with safety guidelines.

Most of the respondents agreed that occupational health hazards are a serious concern for nurses in all healthcare settings. Regarding incident reporting, the majority agreed that they regularly report incidents or near-misses. Training adequacy remained an issue, with more than half of the respondents disagreeing that the hospital provides sufficient training on occupational health hazards and safety practices.

Workload was identified as a major challenge, with the majority agreeing that it affects their ability to consistently follow safety guidelines. Less than half agreed that management ensures the availability of necessary resources, such as PPE, to reduce occupational hazards. Furthermore, most of the respondents disagreed that regular occupational health and safety (OHS) training improves nurses' ability to handle workplace hazards, highlighting gaps in training effectiveness. Despite these challenges, most of the respondents agreed that they actively participate in risk assessments to identify potential workplace hazards. However, more than half reported that fatigue or stress often affects their adherence to occupational safety practices.

Figure 3 below shows that slightly more than half had good practices of OHS.



Figure 3: Practice levels of OHS

		Practice of OHS		
Variables	Category	Good practice n (%)	Poor practice n (%)	P-value
Age	20-30	32 (51.6)	30 (48.4)	0.807
	31-41	35 (47.9)	38 (52.1)	
	41 and above	19 (45.2)	23 (54.8)	
Work experience	1-10	70 (51.1)	67 (48.9)	0.477 ^a
	11-21	15 (42.9)	20(57.1)	
	22+	1(25.0)	3 (75.0)	
Gender	Male	31(49.2)	32 (50.8)	0.662
	Female	60 (52.6)	54 (47.4)	
Marital status	Single	34(52.3)	31(47.7)	0.763 ^a
	Married	48 (46.2)	56 (53.8)	
	Divorced	2 (40.0)	3(60.0)	
	Widowed	2 (66.7)	1 (33.3)	
Highest qualification	Certificate	12 (48.0)	13 (52.0)	0.607 ^a
	Diploma	35 (46.7)	40 (53.3)	
	Bachelor'	32(47.8)	35 (52.2)	
	Master'	7(70.0)	3 (30.0)	
Profession	Registered nurse	39 (39.8)	59 (60.2)	0.051
	Nurse Midwife	24 (58.5)	17 (41.5)	
	Nurse educator	10 (52.6)	9 (31.6)	
	Enrolled nurse	13 (68.4)	6 (31.6)	

a=Fisher's Exact test

Table 5 above shows that there was no significant relationship between occupational health and safety (OHS) practices and demographic factors. Age, work experience, gender, marital status, and highest qualification had no significant association.

Table 6: Results from the Chi-square test

Variables	Category	Level of practice		P-Value
		Good practices (n=91)	Poor practices (n=89)	
Knowledge	Good	69(50.7)	67(49.3)	0.743
	Poor	22(53.7)	19(46.3)	
Attitude	Positive attitude	53(49.5)	54(50.5)	0.536
	Negative attitude	38(54.3)	32(45.7)	

Table 6 above shows that there was no significant relationship between OHS practices and knowledge level ($p > 0.05$). Similarly, attitude towards OHS was not significantly associated with the level of practice ($p > 0.05$).

Table 7: Binary Logistic Regression Test Results

Variable	AOR (95% CI)	P-value
Age		
20-30	1	-
31-41	0.97 (0.33 – 2.91)	0.963
41+	1.12 (0.41 – 3.06)	0.819
Work Experience		
1-10 years	1	-
11-21 years	0.23 (0.02 – 2.91)	0.255
22+ years	0.38 (0.03 – 4.72)	0.453
Attitude	1.32 (0.69 – 2.54)	0.404
Knowledge Level	1.24 (0.59 – 2.60)	0.579

Table 7 continues...

Marital Status		
Single	1	-
Married	1.55 (0.11 – 22.05)	0.747
Divorced	1.77 (0.13 – 24.69)	0.671
Widowed	2.02 (0.08 – 50.14)	0.669
Highest Qualification		
Certificate	1	-
Diploma	1.73 (0.32 – 9.26)	0.521
Bachelor's Degree	1.93 (0.40 – 9.44)	0.416
Master's Degree	2.19 (0.46 – 10.47)	0.327
Profession		
Registered Nurse	1	-
Nurse Midwife	3.38 (1.04 – 10.96)	0.042
Nurse Educator	1.35 (0.38 – 4.81)	0.642
Enrolled Nurse	1.93 (0.46 – 8.13)	0.370

Table 7 above reveals that only the profession significantly influenced the practice of OHS among nurses. Specifically, being a Nurse Midwife was associated with higher odds of practicing OHS. Other factors were not significant predictors of OHS practice among nurses.

DISCUSSION

Socio-demographic characteristics of nurses, the result of this indicates that most of the respondents (64.4%) were female, (41.2%) were aged between 31-41 years, the median age was 33 years (IQR: 29.0-41.0), and more than half (58.8%) were married. Education (41.2%) of respondents had attained a diploma qualification in nursing or midwifery, and (77.8%) had worked for 1-11 years, the median work experience was 7 years (IQR: 3.5–10.0).

The result of this study revealed that while chi-square did not show a significant ($p=0.051$), the

regression model did show that the variable "profession" was statistically significant (0.042) in influencing nurses' knowledge and attitudes toward occupational hazards and safety practices at Kasama General Hospital. The odds ratio (OR), (AOR: 3.38; 95% CI: 1.04 – 10.96; $p = 0.042$) suggests that midwives are 3 times more likely than others to have better knowledge and a positive attitude toward

Studies have shown that professional status plays a critical role in shaping healthcare workers' knowledge and attitudes toward occupational hazards. A study by Kumar et al. found that registered nurses had a significantly higher level of awareness regarding occupational risks compared to auxiliary nursing staff, likely due to more comprehensive training and continued professional education. Similarly, Ndejjo et al. reported that higher professional qualifications were associated with increased adherence to safety practices among healthcare workers in Uganda. This aligns with the

current study's findings, suggesting that more qualified nurses, such as registered nurses, may have better awareness and attitudes toward occupational safety than enrolled nurses or student nurses.

One possible explanation for this relationship is that higher levels of education and professional responsibility equip nurses with better problem-solving skills, risk assessment abilities, and adherence to safety protocols. A study conducted by Denge *et al.* emphasized that nurses with more years of formal education and professional training were more likely to recognize occupational hazards and comply with standard safety measures. Additionally, registered nurses and midwives, who often hold supervisory roles, may feel more accountable for enforcing workplace safety standards, contributing to their increased awareness and positive attitudes.

However, the findings also indicate that certain categories of nurses may have lower odds of demonstrating adequate knowledge and a positive attitude toward occupational hazards. This is consistent with findings from George *et al.*, who found that enrolled nurses and less experienced staff were less knowledgeable about occupational risks and personal protective equipment (PPE) use. This knowledge gap could be attributed to limited access to continuous professional development opportunities, lack of exposure to real-life occupational hazards, or a workplace culture that does not adequately reinforce safety education.

The statistical significance of profession in determining occupational hazard awareness among nurses at Kasama General Hospital highlights the need for targeted interventions. Regular training workshops, mentorship programs, and refresher courses tailored to nurses at different professional levels could help bridge the knowledge gap. Furthermore, hospital administrators should implement safety policies that promote continuous learning and enforce compliance with occupational safety guidelines across all professional cadres.

The study result revealed no significant association between OHS practices and socio-demographic factors such as age ($p=0.807$), work experience ($p=0.477$), gender ($p=0.662$), and education ($p=0.607$). This contrasts with studies suggesting that higher education and work experience improve OHS compliance. Gender differences were also not significant, despite literature indicating female nurses adhere more to PPE use. Similarly, marital status ($p=0.763$) did not influence OHS practice. These findings suggest that institutional policies, workplace culture, and training may be more influential than demographic factors. Regular training and policy reinforcement are crucial for improving OHS adherence across all staff categories.

Regarding knowledge of nurses on OHS practice. The result of this study, revealed that 77% of nurses at Kasama General Hospital have good knowledge of occupational hazards and safety practices. This aligns with studies in Nigeria, Somalia, and Palestine reported high levels of knowledge among healthcare workers, with percentages ranging from 78.2% to 96.2%. These results suggest that OHS training and education programs are generally effective in enhancing the awareness of healthcare workers regarding occupational risks. However, the study also revealed that only 51% of nurses adhered to recommended safety practices, pointing to a significant gap between knowledge and actual behaviour. This discrepancy is not unique to this study and mirrors findings from another research. A study in Nepal revealed that, although 68.1% of nurses had knowledge of occupational hazards, only 25.4% demonstrated good preventive practices. Similarly, research in Northern Cyprus reported that, despite 79.7% of nurses having adequate OHS knowledge, only 23% practiced standard precautions.

The adjusted odds ratio (AOR) of 1.24 (95% CI: 0.59–2.60, $p = 0.743$) suggests a weak and statistically insignificant association between knowledge and adherence to safety practices. The high p -value of 0.743 indicates that knowledge

alone may not be a strong predictor of safe behaviour, and that other factors must be considered. These results align with those of studies that also found a disconnect between knowledge and practice. A study in Ghana highlighted that while 85% of nurses were knowledgeable about safety protocols, only 45% practiced them consistently. This again emphasizes that factors such as institutional support, available resources, and workplace culture play a crucial role in shaping healthcare workers' adherence to safety protocols. On the other hand, a study conducted in Turkey found a more positive correlation between knowledge and practice, where 85% of nurses with good knowledge also demonstrated adherence to safety practices. This discrepancy between studies could be due to differences in healthcare systems, institutional policies, and resource availability, which can either facilitate or hinder the translation of knowledge into practice. The findings of this study can be interpreted through the lens of the Theory of Planned Behaviour (TPB), which asserts that attitudes, subjective norms, and perceived behavioural control influence behaviour. Although nurses demonstrated good knowledge of occupational health and safety (OHS) guidelines, their moderate adherence highlights that knowledge alone does not guarantee compliance. In line with TPB, this gap may be explained by external constraints, such as limited resources, institutional policies, and high workloads, that undermine perceived behavioural control. Moreover, subjective norms, such as organizational culture and management expectations, may shape behaviour by reinforcing or deterring adherence. Addressing these institutional barriers is therefore essential to strengthening OHS compliance among healthcare workers.

The wide confidence interval around the AOR further suggests that other external factors play a significant role in influencing adherence. The TPB framework suggests that improving OHS practices requires not only enhancing knowledge but also addressing barriers related to resources and institutional support.

Regarding attitudes of nurses towards OHS practice. The result of this study revealed that 60% of nurses at Kasama General Hospital exhibited a positive attitude toward occupational health and safety (OHS), while a portion of the nurses had negative perceptions, viewing safety measures as an additional burden. These results are consistent with studies from Nigeria and India, where healthcare workers generally displayed positive attitudes towards OHS. However, contrasting results were observed in Palestine, where a significant portion of nurses held negative attitudes toward OHS, which was linked to poor safety practices. These differences underscore the fact that while many nurses acknowledge the importance of OHS, factors such as workload, and institutional culture of the workplace can heavily influence their attitudes and, consequently, their practices.

Additionally, the adjusted odds ratio (AOR) of 1.32 (95% CI: 0.69–2.54, $p = 0.536$) suggests a positive but statistically insignificant association between positive attitudes and OHS practices. The p -value of 0.536 indicates that attitude alone is not a significant predictor of behaviour change in this study. This finding is in line with a study conducted in Thailand, where 91.9% of healthcare workers had a positive attitude towards OHS, reflecting a strong safety culture. However, studies from India and Somalia have shown that despite a positive attitude, nurses may still fail to adhere to safety practices, often due to factors such as workload and lack of enforcement of safety protocols. This suggests that while a positive attitude is essential, it is not sufficient on its own to ensure the adoption of OHS practices, as practical barriers may prevent the translation of attitude into behaviour.

Considering the Theory of Planned Behaviour (TPB), positive attitudes alone do not guarantee adherence to OHS, the nurses' behaviour is also shaped by social pressures and their ability to control safety measures. The moderate AOR and the wide confidence interval suggest that external factors such as institutional policies, available resources, and the overall safety culture play a significant role

in determining whether nurses can practice what they know and believe.

In terms of OHS practice of nurse. the result of this study revealed that, 51% of nurses in this study adhered to OHS safety practices. This result is consistent with research conducted in Pakistan, where OHS practice levels among nurses were 57.72%. A study in Zambia on infection prevention among pharmacy students showed that 85.5% had good practices, demonstrating that strong institutional policies and support can significantly improve adherence to safety practices. In contrast, the study result in Iraq, low OPS practice at 35%. Similarly, studies from Northern Cyprus and Nepal revealed low adherence to OHS practices despite having high levels of knowledge.

These results suggest that knowledge alone is insufficient to ensure the proper implementation of safety practices, as external factors such as the availability of personal protective equipment (PPE), adequate supervision, and manageable workloads play a vital role in determining adherence to safety protocols. At Kasama General Hospital, these challenges are particularly evident due to contextual institutional issues, such as budget constraints, which lead to inconsistent PPE availability, leaving nurses without essential protective gear like gloves, masks, and aprons. Supervision is limited, primarily due to shortages in senior staff, which results in infrequent monitoring of OHS compliance. Additionally, a high patient-to-nurse ratio contributes to burnout and reduces nurses' ability to adhere to safety protocols. The absence of regular in-service training and minimal enforcement of accountability mechanisms further creates an environment where safety practices are not consistently prioritized. Consequently, the lack of a statistically significant relationship between knowledge and practice highlights the need to address these systemic and organizational barriers. Robust safety protocols, consistent policy enforcement, improved resource allocation, and continuous training are essential to bridging the gap between knowledge and behaviour. These findings

align with the Theory of Planned Behaviour, which emphasizes that perceived behavioural control, shaped by external conditions, determines whether individuals can effectively act on their knowledge and attitudes.

LIMITATION

In this study a systematic random sampling was employed, the sample may still not fully represent the entire nursing population at Kasama General Hospital. This limitation was addressed by including nurses from different departments and shifts to enhance diversity, though future studies should consider a larger sample for broader generalizability.

The study's reliance on self-reported data may introduce social desirability bias, where participants provide answers, they believe are socially acceptable. To minimize this, the study emphasized confidentiality, encouraged honest responses, utilized neutral wording in the data collection tool to reduce perceived judgment and response misrepresentation.

CONCLUSION

This study assessed nurses' knowledge, attitudes, and practices toward occupational health and safety (OHS) at Kasama General Hospital. The results of this study revealed that most nurses (77%) had good knowledge of OHS, demonstrating awareness of workplace hazards, safety regulations, and the importance of personal protective equipment. However, despite high knowledge levels, attitudes and practices varied, with 60% of participants displaying a positive attitude toward OHS, while only 51% exhibited good safety practices. Statistical analysis showed no significant association between demographic factors (age, gender, work experience, or education) and OHS practices, nor between knowledge, attitude, and practice levels ($p > 0.05$). These results highlight the need for improved safety training, effective supervision, and enhanced institutional support to bridge the gap between knowledge and practice, ensuring a safer working environment for nurses.

RECOMMENDATIONS

Based on the study results, the following recommendations are made:

1. Ensure consistent provision of PPE and enforce safety regulations through periodic audits.
2. Implement ongoing, hands-on OHS training focused on practical application.
3. Enhance supervisory roles to reinforce compliance.
4. Establish clear accountability frameworks for safety protocol violations and provide regular feedback to staff.
5. Introduce staffing policies to reduce nurse fatigue and improve adherence to safety protocols.

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COMPETING INTEREST

The authors declare that there is no conflict of interest in this study.

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