ORIGINAL ARTICLE

Nurses' Knowledge, Attitudes and Practices of pain assessment and management in the Intensive Care Unit: A Study at Kasama General Hospital, Zambia

Chibochi Kaminsa[1], Priscar Sakala Mukonka[2], Phadaless P. Sinkamba[3], Peter Julius[4]

[1]*School of Nursing and Midwifery Sciences, Eden University, Lusaka, Zambia*
[2] *Lusaka College of Nursing, Lusaka, Zambia*
[3]*School of Nursing sciences, University of Zambia, Lusaka, Zambia*
[4] *School of Medicine, University of Zambia, Lusaka, Zambia*

ABSTRACT

Background: Critically ill patients, have challenges reporting pain given their physical state. The complex nature of critical illness and diverse needs of patients may impact on the effectiveness of pain assessment and management in the intensive care units (ICU). Effective pain assessment culminates in effective pain management and nurses play an important role in ensuring effective pain management. On the other hand, poor pain management impacts patient outcomes resulting in prolonged hospital stay, increased mortality and morbidity, depression and post-traumatic stress disorders. Existing literature has shown a gap in the practice of pain assessment and management and efforts have been made to try to mitigate the inefficiencies among nurses, yet their knowledge, attitudes, and practices (KAP) in this domain remain variable and impact patient outcomes. This study therefore, sought to assess the nurses' knowledge, attitudes and practices towards pain assessment and management of patients in ICUs at Kasama General Hospital.

Methods: A quantitative study using a cross sectional analytical study design guided the study. The study was conducted on a population of 53 nurse's selected using census sampling method. A self-administered questionnaire was used following approval from local Ethics Committee. Written consents were obtained before commencement of the study. Data was analyzed using SPSS version 26 employing Binary Logistic regression and Chi square.

Results: The results revealed significant associations ($P \leq 0.05$) between gender ($P = 0.014$), years of experience ($P = 0.046$), and attitude ($P = 0.002$) and practice of pain assessment and management. Binary regression also revealed that females (AOR: 6.247, 95% CI: 1.19-32.70, $p = 0.030$), nurses with more than 10 years of experience (AOR: 3.962, 95% CI: 1.26-23.5, $p = 0.002$) and nurses working in the Pediatric Intensive Care Unit (AOR: 3.504, 95% CI: 0.001-11.51, $p = 0.019$) and

Corresponding author:
Chibochi Kaminsa
Email: kaminsacemelia@gmail.com

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Neonatal Intensive Care Unit (AOR: 6.098, 95% CI: 2.85-5.82, p = 0.002) had significantly increased odds of good practice. In addition, positive attitude (Attitude: AOR: 2.007, 95% CI: 2.33-23.3, p = 0.016) and possessing knowledge (AOR: 3.267, 95% CI: 0.99-2.47, p = 0.004) about pain assessment and management was significantly associated with higher odds of good practice.

Conclusion: Pain assessment and management practices among nurses are influenced by knowledge and attitudes. Therefore, there is need for intensified professional development programs, establishing of standardized protocols for pain assessment and management, encouraging ongoing training and competency assessments among nurses and implementation of regular pain assessments using standardized tools.

INTRODUCTION

Pain assessment and management is cardinal in promotion of comprehensive care to critically ill patients and should be conducted by all nurses working in ICUs. Internationally it is estimated that over 5 million people are admitted into the Intensive care unit annually with patients in need of but not limited to: cardiac monitoring, respiratory support and acute pain management[1]. Pain is a major issue among critically ill patients and a common occurrence that it is considered a fifth vital sign in patients that are severely ill, making it an important marker in the patients' condition and indicator of the patient's rate of recovery[2]. The incidence rate of pain in critically ill patients increases during nursing procedures such as suctioning, turning and insertion of tubes; therefore, failure to accurately assess pain may result in significant physiological and psychological consequences such as depression, anxiety, post-traumatic stress disorders, increased morbidity and mortality[3]. Globally, there is ongoing need for improvement in regards to knowledge, attitudes and practices of nurses towards pain assessment and management

Ideally, all patients should be assessed for pain in the ICU and pain treatment should be administered according to the pain scores[4, 5]. This nonetheless, is not the case at Kasama General ICUs as pain assessment rates were below par and pain management was conducted irrespective of the pain scores. Assessment of patients' pain in the ICU was inadequate with 40.7% being the highest pain assessment rate by nurses in the year 2020, with all admitted patients receiving treatment regardless of their pain scores[6]. Therefore, a KAP study on pain assessment and management among nurses plays a critical role in identifying knowledge gaps and behavioral patterns in the implementation of effective pain management interventions to promote improved patient outcomes and patient wellbeing[7,8].

Inspite of researches conducted in Zambia, in the context of Kasama General Hospital; the researcher did not come across any published information describing KAP of nurses in ICUs at Kasama General Hospital. Without understanding of the KAP of nurses in the ICU towards pain assessment and management, health care providers may have challenges improving pain management practices in critically ill patients. This study therefore, sought to assess the KAP of nurses towards pain assessment and management at Kasama General Hospital ICU settings contributing to informed evidence based practice, improving health care provider education, understanding nurses' practices, improving patient outcomes and enhancing patient care in the ICU.

METHODOLOGY

The study was conducted using a quantitative analytical cross sectional design at Kasama General Hospital ICUs. This study setting was selected because it aligned with the researchers' interests and was relevant to the research questions. However, a cross sectional study has its limitations because it is unable to determine causality between factors. In addition, Census sampling method was used in this study as it minimizes bias by incorporating the entire population of interest (60 nurses), ensuring an inclusive representation of the study group. In addition, the inclusion criteria encompassed all

nurses that were available at the time of data collection with a response rate of 88.3% (53 nurses). Exclusion criteria included all nurses that were on sick leave, school leave, or traveled out of the work area at the time of data collection.

A self-administered questionnaire was utilized in this study and the questions in the tool were adapted from the modified Knowledge and Attitude Survey Regarding Pain (KASRP) assessment tool developed by Betty Ferrell[9]. The KASRP was designed to assess nurses' knowledge, attitudes and practices regarding pain. The tool has been validated and widely used in studies across healthcare systems similar to Zambia's, demonstrating its reliability and applicability. The questionnaire adapted ensured the same questions were asked to participants to reduce interviewer bias and response bias. Face and content validity was ensured by soliciting suggestions from experts, advisers and lecturers to ensure clarity, relevancy and consistency with the study objectives. Content reliability was established with a confirmed Cronbachs alpha of 0.7 and test to test reliability of 0.85.

The researcher approached the participants during their intended work shift; they were informed about the research study, its purpose, benefits and risks and informed consent was sought. The use of serial numbers on each questionnaire with no name was included to ensure privacy and confidentiality. In addition, a pilot study was conducted at Mbala General Hospital to test the questionnaires efficacy and ensure questions were clear, unbiased, concise and relevant to the target population. The pilot study involved people who met the eligibility criteria for the study. The sample size for the pilot study was 20% of the total sample population.

Data was analyzed using SPSS version 26 for statistical analysis. To assess the associations between variables, Chi square was utilized. In addition Multivariable Binary logistic regression analysis was conducted to calculate unadjusted and adjusted odds ratios between variables. A significance level of 0.05 and a 95% confidence interval was used, with p-values below 0.05 considered statistically significant.

RESULTS

Table 1: Socio-demographic Characteristics (n=53)

Variables	Frequency	Percentage
Gender		
Female	34	64.2%
Male	19	35.8%
Total	**53**	**100%**
Years of experience		
<2 years	19	35.8%
3-5 years	24	45.3%
6-9 years	9	17.0%
>10	1	1.9%
Total	**53**	**100%**
Location of work		
Micu	17	32.1%
Picu	19	35.8%
Nicu	17	32.1%
Total	**53**	**100%**
Level of education		
Master of science	2	3.8%
Bachelor of science	2	3.8%
Diploma	49	92.5%
Certificate	0	0.0%
Total	**53**	**100%**

The table above shows the distribution of socio-demographic characteristics among the 53 participants assessed in the study which shows that 64.3% (34) were female, 50.9% (n=27) were below 25 years old, 45.3% (n=24) had 3-5 years of work experience. In addition, according to work location, participants were relatively evenly distributed among MICU, NICU and PICU 31.2% (n=17) each and 92.5% (n=49) held a Diploma.

Knowledge regarding pain assessment and management (n=53)

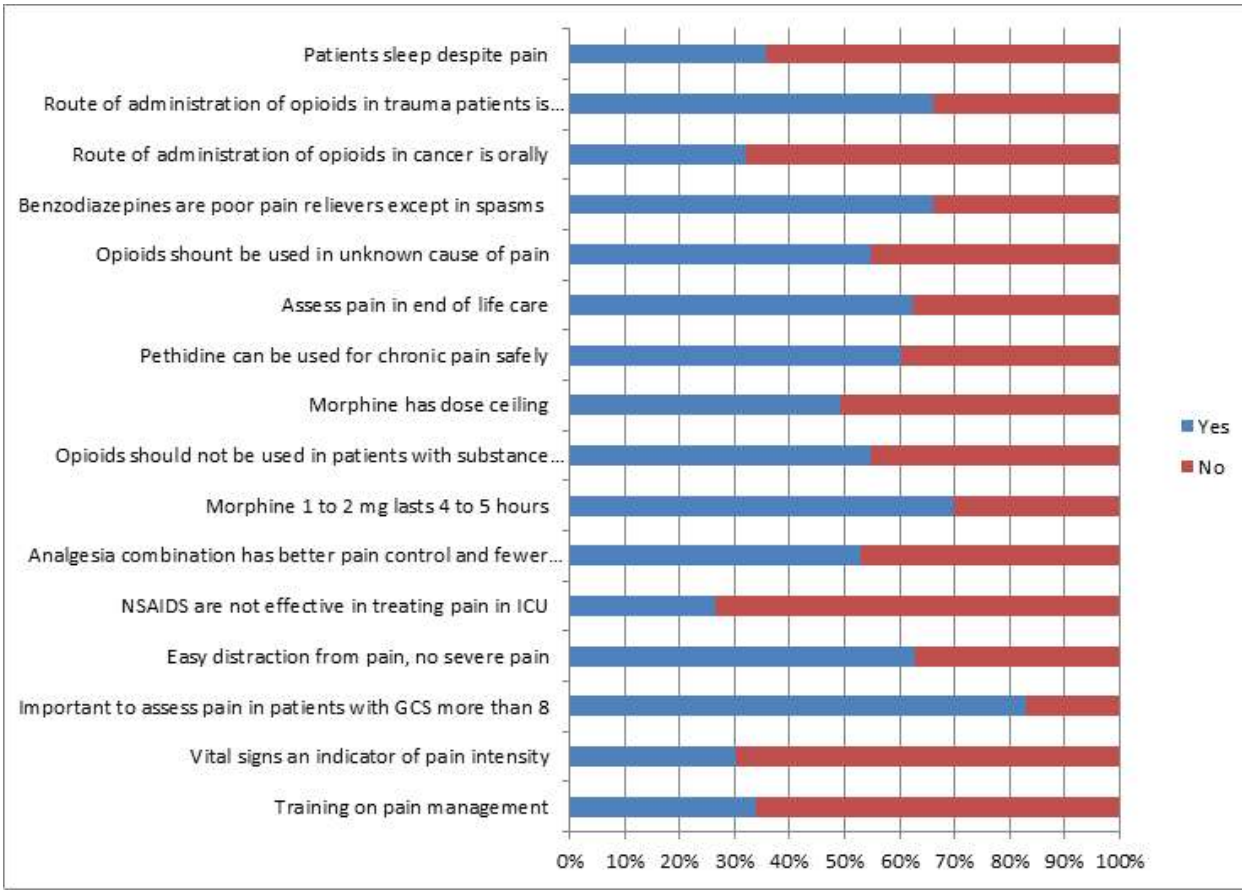

Figure 1: Knowledge regarding pain assessment and management responses

Figure 1 shows that among 53 participants, 66.0% (n=35) had no pain management training while 69.8% (n=37) believed vital signs were not an indicator of pain intensity. Moreover, 83.4% (n=44) recognized the importance of pain assessment in patients with Glasgow Coma Scale (GCS) less than 8 while 62.3% (n=33) stated that patients that are easily distraction from pain do not have severe pain. The results also revealed that 73.6% (n=39) believed that Non-steroidal Anti-inflammatory Drugs (NSAIDS) are effective in managing pain and 60.4% (n=30) agreed that Pethidine can be used for chronic pain safely. This study showed that 66% (n=35) of participants agreed that benzodiazepines are poor pain relievers except for pain caused by spasms while 64.2% (n=34) disagreed to the statement that patients can sleep despite pain. Additionally, participants showed varying levels of understanding regarding opioid administration, with misconceptions about the existence of morphine dose ceiling, 50.9% (n=27) of the participants disagreed. Furthermore, 54.7% (n=29) agreed with the appropriateness of opioid utilization in patients with substance abuse.

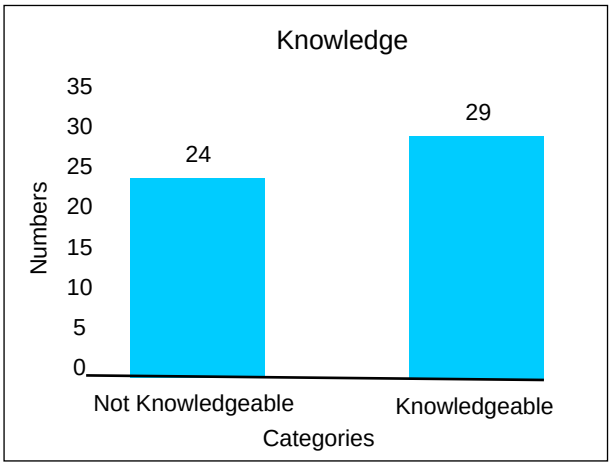

Figure 2: knowledge levels of nurses on pain assessment and management (n=53)

The figure above displays the summary of the categories of the knowledge variable, revealing that slightly more than half, specifically 54.7% (29) demonstrated knowledge regarding the assessment and management pain in critically ill patients.

Attitudes Regarding Pain Assessment and Management (n=53)

Figure 3 reveals that 73.6% (n=39) of the participants do not believe that patients should be encouraged to endure as much pain as possible before using opioids while 84.9% (n=45) believe use of a placebo is useful in determining presence of pain indicating concerns about the patients self-reported pain. In addition, 73.6% (n=39) believed patients pain perception can be affected by their spiritual beliefs affecting the patients tolerance to pain. Furthermore, 84.9% (n=45) of the participants believed that the patient is the accurate judge of the intensity of pain indicating the subjectivity of pain in patients.

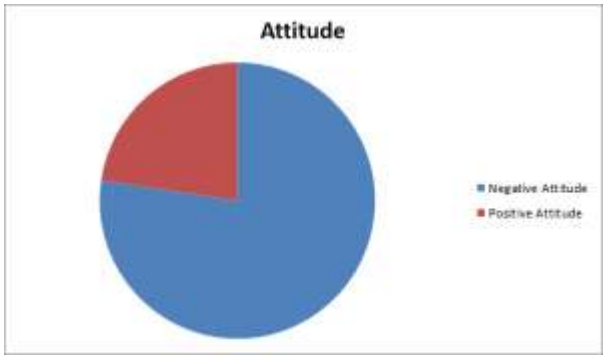

Figure 4: Attitudes regarding pain assessment and management (n=53)

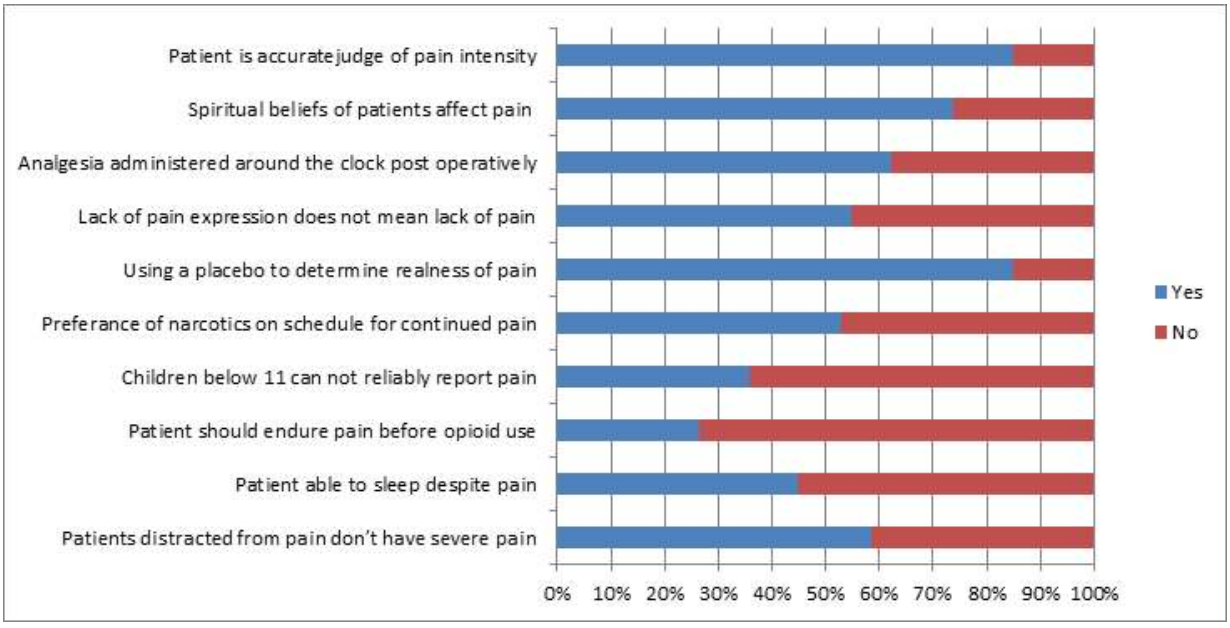

Figure 3: Attitudes regarding pain responses

The figure 4 above illustrates that the majority of participants, comprising 77.4% (41), held negative attitude towards the assessment and management of pain in critically ill patients.

Practices Regarding Pain Assessment and Management

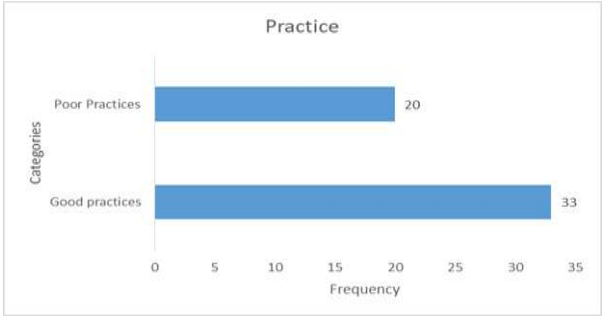

Figure 5: practices regarding pain assessment and management (n=53)

As depicted in the figure above, it was observed that the majority of participants 62.3% (33) demonstrated good practice in the assessment and management of critically ill patients.

Table 2 Chi-square Association between variables (n=53).

VARIABLE S	PRACTICE				
	Good Practices		Poor practices		
	Frequency	Percentage	Frequency	Percentage	P-value
GENDER					
Female	17	50.0%	17	50.0%	
Male	16	84.2%	3	15.8%	0.014
Total	**33**		**20**		
YEARS OF EXPERIENCE					
<2 years	13	68.4%	6	31.6%	
3-5 years	15	62.5%	9	37.5%	0.046
6-9 years	4	44.4%	5	55.6%	
>10	1	100.0%	0	0.0%	
Total	**33**		**20**		
ATTITUDE					
Negative Attitude	21	51.2%	20	48.8%	0.002
Positive Attitude	12	100.0%	0	0.0%	
Total	**33**		**20**		

The table above depicts the chi-square test results which revealed significant associations ($P \leq 0.05$) between certain variables and practices related to pain assessment and management. Gender (P = 0.014), years of experience (P = 0.046), and attitude (P = 0.002) were found to have significant influences on these practices.

Table 3: Binary Logistic regression results of factors associated with practice of pain assessment and management (n=53)

Practice	UOR	P-value	95% CI		AOR	P-value	95% CI	
Gender								
Male	Ref				Ref			
Female	9.692	0.022	1.389	67.644	6.247	0.030	1.193	32.705
Years of experience								
<2 years	Ref				Ref			
3-5 years	0.406	0.331	0.066	2.498	1.357	0.360	1.561	17.007
6-9 years	0.052	0.069	0.002	1.259	2.070	0.188	0.615	11.894
>10	2.000	0.865	0.072	2.473	3.962	0.002	1.258	23.490
Location of work								
Micu	Ref				Ref			
Picu	0.162	0.052	0.026	1.015	3.504	0.019	0.001	11.508
Nicu	0.873	0.901	0.104	7.353	6.098	0.002	2.854	5.325
Knowledge								
Not knowledgeable	Ref				Ref			
Knowledgeable	2.086	0.371	0.416	10.451	3.267	0.004	0.985	2.468
Attitude								
Poor	Ref				Ref			
Good	0.762	1.093	2.876	5.854	2.007	0.016	2.326	22.231

UOR=Unadjusted Odd Ratio, AOR=Adjusted Odd Ratio, CL=Confidence Interval

The data analysis revealed significant associations between various factors and good practice in pain assessment and management. Females exhibited a significantly higher likelihood of good practice compared to males (AOR: 6.247, 95% CI: 1.19-32.705, p = 0.030), while participants with more than 10 years of experience showed significantly higher odds of good practice (AOR: 3.962, 96% CI: 1.26-23.49, p = 0.002). Additionally, working in the Pediatric Intensive Care Unit (PICU) and Neonatal Intensive Care Unit (NICU) significantly increased the odds of good practice compared to the Main Intensive Care Unit (MICU) (PICU: AOR: 3.504, 95% CI: 0.001-11.51, p = 0.019; NICU: AOR: 6.098, 95% CI: 2.85-5.325, p = 0.002). Moreover, having a positive attitude and possessing knowledge about pain assessment and management were significantly associated with higher odds of good practice (Attitude: AOR: 2.007, 95% CI: 0.96-2.47, p = 0.016; Knowledge: AOR: 3.267, 95% CI: 2.33-22.23, p = 0.004).

DISCUSSION

Social demographic characteristics are individual characteristics of nurses that work in the ICU that influence their behaviors, experiences and patient outcomes. Characteristics such as age, gender and level of education are crucial in understanding various aspects of their practice regarding pain assessment and management that can ultimately influence and affect the patients' wellbeing. Examining these factors helps to understand the complex association between social-demographic characteristics and practices of pain assessment and management ultimately informing strategies to improve and promote patient wellbeing.

The socio-demographic characteristics of nurses in this study revealed some characteristics that could influence their knowledge, attitudes, and practices regarding pain assessment and management in the ICU setting. Firstly, the predominance of female nurses (64.2%) aligns with global trends in nursing demographics, where women make up the majority of the nursing workforce. Shen et al[10] observed higher proportion of female nurses (73%) highlighting potential gender imbalances in nursing demographics across different regions. Gender distribution imbalance might have implications for communication styles in the ICU, empathy, and caregiving approaches, which could impact pain assessment and management practices as females tend to be more inclined to cultural roles of caring and subtle role of submissiveness inhibiting their ability to effectively communicate in the health care team but with increased capacity of providing adequate care to ICU patients. However, Ahmed et al[11] found a slightly higher proportion of male nurses of (53%) working in the ICU attributed to increased knowledge levels in males and willingness to take on more difficult tasks. These differences highlight the differences in gender distribution across different settings in the ICU. This study further revealed that female nurses have higher likelihood of good practice than their male counterparts with a p=0.03 as females tend to be more inclined to cultural roles of caring and subtle role of submissiveness inhibiting their ability to effectively communicate in the health care team but with increased capacity of providing adequate care to ICU patients indicating the need for equity in distribution of nurses that should include both male and female. Further studies should investigate the impact of gender distribution on pain assessment and management to identify what the effects of uneven gender distribution.

Years of experience showed a significant proportion of nurses with 3-5 years of experience (45.3%), suggesting a relative balance between novice and experienced practitioners in the ICU. This study also showed that there is an association between years of experience and practice of pain assessment and management in which the p= 0.046. In addition, nurses that worked for longer than 10 years had higher likelihood of good practice p=0.002. This could be attributed to nurses having the necessary experience and expertise to assess and manage pain effectively compared to novices because of the long years of practice. This is in agreement with a study by Olaolorunpo et al[12] in a tertiary hospital in Nigeria that reported a higher percentage of nurses with over seven years of experience had good pain management practices, suggesting a more seasoned workforce, whose results were similar to studies by Ndlovu et al[13] and Castaño-García et al[14] which could stem from similarities in healthcare systems, workforce retention strategies, and cultural norms regarding nursing careers and job stability, indicating that the mix of nurses with different years of experience is critical to diversify perspectives on pain assessment and management approaches, and increase potential mentorship opportunities

Regarding the location of work units, this study revealed even distribution of nurses across MICU, PICU and NICU with about 32%, highlighting the need for tailored pain management strategies to suit different patient populations and ICU care settings. Additionally, working in the Pediatric Intensive Care Unit (PICU) p=0.019 and Neonatal Intensive Care Unit (NICU) p=0.002 significantly increased the odds of good practice. This could be attributed to nurses working in the PICU and NICU having to work with children and are more empathetic and

comprehensive in their pain assessment and management practices. This is in line with a study by Cha et al[15] that revealed that location affected nurses' practice to pain assessment and management. Further studies should be done to assess the personalized needs of different ICU settings and adopt strategies that will help improve patients' wellbeing by identifying, initiating and adopting adequate staffing needs for each ICU location.

The results of this study align with the Knowledge, Attitude and Practice model employed. The model underscores the importance of personal experiences, cultural roles and beliefs on the behaviours of nurses in the ICU including practices [16]. This model highlights how experiences, culture and beliefs affect the nursing care practices in the health care setting. Familiarity with these factors can promote understanding of why nurses may practice in a certain way indicating the need for mentorship programs in enhancing positive practices.

The implications of these findings underscore the importance of considering socio-demographic factors when designing interventions to improve pain assessment and management practices in ICU settings. Targeted educational programs, mentorship initiatives, and competency assessments should take into account the varying backgrounds, experiences, and career aspirations of nurses. Additionally, cross-cultural perspectives and best practices from diverse healthcare settings can enrich training curricula and foster a more holistic approach to pain management education[17]. Ultimately, a nuanced understanding of socio-demographic factors and their impact on pain assessment and management practices is important for developing evidence-based interventions that address the unique needs and challenges faced by ICU nurses worldwide.

Knowledge is acquisition, organization and utilization of information and skills from documented articles and experiences. The results of this study relatively reiterate this connotation. The analysis of the nurses' level of knowledge on pain assessment and management in this study revealed significant misconceptions and knowledge gaps. The study revealed average levels of knowledge (54%) among nurses which is in contrast to a study done by Younis[18] conducted in Jordan, that showed that majority (63.4%) of nurses had inadequate knowledge about pain assessment that emulates studies done by Iklima et al[19] and Al- Sayaghi et al[20] in United Arabic Emirates (UAE) that showed that majority of the respondents (70%) had poor knowledge on pain assessment and management by ICU nurses. The difference in knowledge levels suggests the need for standardized education resources and facilities to increase information access and retention amongst nurses in ICU.

On another hand, a study conducted in Kazakhstani, showed that the nurses level of knowledge about pain assessment was low (34%)[21], which was related to lack of proper training and lack of pain assessment tools indicating varying knowledge levels among ICU nurses due to different constraints, highlighting the need for ICU nurses to undergo some form of training on pain assessment and provision of adequate resources to help improve performance of pain assessment and management.

Examining the results of knowledge levels and good practice in this study revealed that nurses who were knowledgeable were more likely to have good practice p=0.004 than those that were less knowledgeable. Adequate knowledge is the basis and cornerstone for good practice as it increases the ability of nurses to utilize evidence based practice regarding pain assessment and management. The findings mirror those of a study by Adenkule et al[22] in a study conducted in Nigeria in which nurses who were knowledgeable had higher likelihood of good practice p=0.003. These findings highlight the need for targeted education and clarification during training and practice in order to enhance nurses' knowledge and optimize pain management practices in the ICU setting.

The gaps revealed in this study revealed that

relatively a significant number of participants had inadequate knowledge (46%) despite having had some training on pain assessment and management. This can be attributed to poor retention of knowledge, over familiarization to the ICU environment and lack of utilization of evidence based practice when managing pain[23, 24] indicating potential differences in educational approaches, clinical practices, educational priorities and cultural influences on the application of knowledge in the management of pain among nurses in the ICU.

The implications of these findings underscore the importance of tailored educational interventions to address specific knowledge gaps and misconceptions identified among ICU nurses. Targeted training programs should focus on enhancing awareness and understanding of evidence-based practices in pain assessment and management, particularly concerning the appropriate use of analgesics and the assessment of pain in specific patient populations[25]. Furthermore, interdisciplinary collaboration and knowledge exchange initiatives can facilitate the dissemination of best practices and promote a more holistic approach to pain management in critical care settings[26]. Ultimately, a comprehensive understanding of nurses' knowledge levels and educational needs is essential for developing effective strategies to improve pain management outcomes and enhance patient care in the ICU.

The perceptions, preferences, beliefs, were analyzed to assess the attitudes of nurses towards pain management. The study illustrated that the majority of participants (77.4%), held a negative attitude towards the assessment and management of pain in critically ill patients. These findings align with a study by Tobiloba et al[27] that conducted a study in a rural hospital in Gambia that found similar trends of negative attitudes (68%) towards pain management among ICU nurses, highlighting the need for comprehensive educational programs and organizational support to foster a positive attitude towards pain assessment and management. Conversely, a study by Pangiliya et al[28] in an urban hospital in Australia reported higher levels of positive attitudes (65%) towards pain management among ICU nurses, indicating potential differences in healthcare practices and cultural perceptions of pain underscoring the importance of individualized approaches to address the diverse needs and perspectives of healthcare professionals.

Attitude of nurses in this study revealed having an association with practice p=0.002. Attitudes influence pain assessment and management because nurses view of pain shapes their behaviour towards it. Similar findings were revealed in a study conducted Jordan in which a small proportion of participants were with positive attitudes 25.76% (95% CI: 11.01-44.12)[29]. This prevailing negative attitude suggests potential barriers to effective pain management practices in the ICU setting, which could have negative implications for patient outcomes and quality of care, suggesting the need to address the negative attitudes through mentorship programs and training to help improve the attitude of nurses towards pain assessment and management and prevent impeding on effective practice.

The study findings emphasize the importance of addressing negative attitudes towards pain assessment and management among ICU nurses through targeted educational interventions, organizational support, and interdisciplinary collaboration[30]. Further analysis and exploration of these attitudes is necessary to identify underlying factors contributing to negative perceptions and develop targeted interventions to address them. Strategies aimed at promoting a positive attitude towards pain management should focus on enhancing awareness of evidence-based practices, addressing misconceptions and biases, and fostering a patient-centered approach among nurses when caring for patients admitted in the ICU. Furthermore, creating a supportive work environment that values open communication, empathy, and collaboration can empower nurses to advocate for optimal pain management practices and improve patient outcomes in the ICU setting.

Practice is the ability of nurses to carry out effective skills through application of knowledge. Practices of nurses in the ICU are affected by various factors. In this study, it was observed that the majority of participants (62.3%) demonstrated good practice in the assessment and management of critically ill patients. Similar proportions of good practice (68%) in pain assessment among ICU nurses was reported in Baghdad[31] indicating the universality of standardized pain assessment protocols and their integration into clinical practice. Further research needs to be conducted to explore the impact of practice on pain assessment and management.

In this study, it was revealed that good practice is association with gender p=0.014, years of experience p= 0.046 and attitudes (p=0.002), this is in disparity with results from a study by Kizza and Muliira[32] in which knowledge has a very high association with utilization of recommended pain assessment practices among ICU nurses (OR=0.103, CI=0.031-0.345) suggesting potential disparities in healthcare resources and organizational support. Additionally, a study by Jones et al[33] in a regional hospital in the United States identified varying levels of pain assessment practices among ICU nurses, highlighting the influence of organizational culture and leadership on clinical practice.

Positive practice suggests a positive trend in the adherence to recommended pain assessment protocols and highlights the commitment of ICU nurses to ensuring optimal pain management outcomes[34]. However, further exploration is warranted to identify specific areas of strength and potential areas for improvement in pain assessment practices, which could enhance the overall quality of care provided to critically ill patients in the ICU setting.

The study findings underscore the importance of fostering a culture of excellence in pain assessment and management practices within ICU settings through ongoing education, training, and quality improvement initiatives through involvement of health educators, nursing schools and policy makers Alnajar et al[35]. Strategies aimed at promoting good practice should focus on enhancing nurses' knowledge and skills in pain assessment techniques, reinforcing the importance of regular pain assessment in patient care plans, and providing adequate support and resources to facilitate effective pain management. Furthermore, fostering interdisciplinary collaboration and communication among healthcare team members can optimize pain assessment practices and contribute to improved patient outcomes and satisfaction in the ICU.

LIMITATIONS OF THE STUDY

Despite the study's contributions, this study had several limitations that should be acknowledged. Firstly, the sample size was relatively small and confined to a single healthcare institution, potentially limiting the generalizability of the findings to other settings. To ensure the results are generalizable, the research included the entire population of the study to allow total representation.

Additionally, the study relied on self-reported data, which may be subject to response bias and inaccuracies. The researcher utilized a standardized data collection instrument that allowed responses to be adequate and easily understood by the participants, giving their responses without misconceptions. Moreover, the study did not explore certain potentially influential factors such as cultural beliefs, organizational dynamics, and individual patient characteristics which could provide awareness into overall factors that affect the nurses' practice of pain assessment and management.

In addition, the study's cross-sectional design captured pain assessment and management practices and its associated factors at a single point in time, which limits the ability to establish causality between variables. To address this limitation, statistical methods such as binary logistic regression were used to identify significant predictors of nurses' pain assessment and management practices, laying the foundation for future longitudinal studies that could assess trends over time.

Finally, the study did not assess the impact of interventions or changes in practice over time, which could provide valuable insights into the effectiveness of initiatives aimed at improving pain assessment and management in the ICU. These limitations highlight areas for further research and suggest caution in interpreting the findings of this study.

CONCLUSION

Pain assessment and management is an important factor in promoting the fundamental wellbeing of critically ill patients and it should be encouraged for it to be effectively and efficiently practiced. This study shows that nurses had good practices; average knowledge levels with negative attitude which can hinder effective pain assessment practices and effect poor pain management. Therefore, highlighting the need for further education opportunities for ICU nurses to improve practices of pain assessment and management and further research on barriers to effective pain assessment and management is warranted.

RECOMMENDATIONS

Based on the findings of this study, several recommendations are made to enhance the knowledge and attitudes of nurses towards pain assessment and management practices in the ICU at Kasama General Hospital:

1. Education and Training Programs- education and training programs should cover updated evidence-based practices on pain assessment and management, pain assessment tools, pharmacological and non-pharmacological interventions, and strategies for effectively communicating with patients about pain. In addition, nurses should be encouraged to pursue ongoing professional development opportunities for nurses to stay updated on advancements in pain management practices through online trainings, attending workshops, seminars, and conferences related to critical care, pain assessment and pain management.
2. Interdisciplinary Collaboration- Attitudes can be improved through fostering interdisciplinary collaboration between nurses and other healthcare professionals involved in patient care, and holding regular discussions of patients' pain assessment and management should be encouraged. Team meetings can assist in development of standardized protocols and guidelines for pain assessment and management tailored to the ICU setting. An effective interdisciplinary team will allow for effective communication that will aid in improved practices regarding patient care in the ICU.
3. Mentorship Programs- Mentorship programs will provide guidance and support to novice nurses to mitigate this gap and acquire desired attitudes. This can facilitate knowledge transfer, skill development, and confidence building among newer staff members.
4. Regular Performance Review- Feedback from these reviews can guide quality improvement initiatives and ensure consistent delivery of high-quality care to patients admitted in the ICU. Therefore, it is important to note that continued evaluation of interventions and practices is essential to drive evidence-based improvements in care delivery focusing in the intensive care unit.
5. Research and Evaluation- Finally, the study revealed significant gaps in the attitudes, knowledge levels which affect the practices of pain assessment and management. Further research on pain assessment and management should be encouraged to explore factors influencing pain assessment and management practices in the ICU setting, including cultural influences, organizational factors, and patient outcomes.

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ETHICAL CONSIDERATION

Approval was sought from UNZABREC-REF-UNZA-4681/2023, NHRA- NHRAR-R-779/15/08/2023 and the Medical superintendent at Kasama General Hospital. In addition, all respondents consented before participation. All research ethical considerations were adhered to.

CONFLICT OF INTEREST

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

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