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Original Research Article

Trauma pain management among nurses at the Emergency and Surgical Units in a Municipal Hospital in Ghana

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Abstract: ***Introduction*:** Trauma pain is one of the most prevalent complaints among patients at emergency settings. Nurses have an indispensable role in the management of trauma pain, but literature has identified inadequate knowledge in pain management among nurses in many countries. This study was done to examine the practice of trauma pain management among nurses at the emergency and surgical units at the Bekwai Municipal Hospital. ***Methodology*:** This was a descriptive quantitative cross-sectional study. The convenience sampling method was employed with a structured questionnaire. Data collected were analysed with IBM SPSS Version 24. Independent t-tests and one-way ANOVA were used to examine the association between demographic characteristics and mean score in knowledge and attitude. P-values which were less than 0.05 were considered statistically significant. ***Results*:** A total of 41 nurses participated in this study. The mean score for knowledge and attitude in traumatic pain management was 51.1%. There was an association between mean score in knowledge and attitude and educational level (p-value = 0.001) and also between mean score in knowledge and attitude and job rank (p-value = 0.001). Nurses with previous training in pain management had higher knowledge and attitude (15.5± 2.7) than those without previous training (14.2± 3.5) in pain management but the mean difference was not significant (p-value = 0.182). ***Conclusions:*** Nurses at the Emergency and Surgical Unit at the Bekwai Municipal Hospital had poor knowledge and attitude toward traumatic pain management.

Keywords: Attitude, Knowledge, Nurses, Practice, Trauma pain.

INTRODUCTION

Trauma is a major public health problem and can present in different forms depending on the nature and extent of occurrence. Trauma not only happens randomly but can be influenced by individual characteristics, peer group relationships, community characteristics, and socio-political factors [1]. Globally, trauma is responsible for 300 million injuries annually, making it a significant, yet preventable global public health issue [2]. Pain is one of the most prevalent complaints among trauma patients in the emergency room settings [3]. The International Association for the Study of Pain define pain as a distressing experience associated with actual or potential tissue damage with sensory, emotional, cognitive and social components [4]. It has been reported that 74% of multi-trauma patients report moderate- to-severe pain, whereas up to 58% of patients report impaired quality of life and ongoing pain or discomfort up to 2 years post-injury [1]. Management of trauma patients has been one of the most resource-intensive medical care performed in resource challenged emergency room settings [2]. It is also known that poor

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analgesia leads to immobility and might also increase cardiovascular, respiratory, and gastrointestinal complications [3]. A study by Modanloo *et al.*, [4], has reported that uncontrolled pain can lead to increased analgesic drug requirements, as well as disease and treatment complications and these problems may result in decreased concentration, decreased appetite, decreased physical activity, poor social communication, sleep disorders, and a reduction in quality of life.

Nurses play a significant in the management of trauma pain [5]. The level of knowledge, attitude and the practices of nurses in the emergency unit may influence the quality of care patients receive [6]. Literature has identified inadequate knowledge of pain management among nurses in some countries [7, 8]. In addition, it has been reported that patients in the emergency unit might not be assessed by nurses for pain because the priority is given to the primary disease at that level [9].

Generally, nurses in resource-limited settings may usually be faced with several challenges in their occupation. Such nurses may find it difficult to keep their knowledge up to date with modern pain management protocols and systems. Consequently, few nurses may be motivated in upgrading their knowledge with emerging protocols in traumatic pain management.

The Bekwai Municipal Hospital is a primary health facility located in the Bekwai Municipal in the Ashanti Region of Ghana. Nurses at the Surgical and Emergency Units of this hospital are faced with the great task of caring for emergency patients with traumatic pains daily. However, there is currently no literature documenting traumatic pain management practice by these nurses. More so, not enough research on knowledge, attitude, and practice of trauma pain management among nurses in Ghana have been done. This study is therefore designed to examine the practice of trauma pain management among nurses at the Surgical and Emergency Unit at the Bekwai Municipal Hospital.

METHODOLOGY

This was a descriptive quantitative cross-sectional study of trauma pain management practice among nurses in the Emergency and Surgical Units of the Bekwai Municipal Hospital. The Bekwai Municipal Hospital is a primary health facility located in the Bekwai Municipal in the Ashanti Region of Ghana. The study included all nurses working in the Emergency and Surgical Units of the hospital who provide direct care to trauma patients. Nursing students, Rotational nurses, Midwives, Community Health Nurses and Ward Assistants, Medical Doctors, Laboratory Technicians and other health personnels working in the hospital were excluded from the study. The purpose of the study was explained to the participants. All participants signed a written informed consent and were told about their right to partake in the study or refuse without any explanation and that they can withdraw at any stage without any punitive measure against them. Ethical approval was granted by the Ghana Health Service with protocol ID NO: GHS-ERC069/03/20. The sample size was determined from the population of nurses at the unit using Yamane formula for a finite population with a margin error of 0.05 [10], $N = [n/(1+N(e)^2]$, where N = the target population of nurses at the unit which is 45 at the time of the survey, e = the margin of error (0.05). Thus, the sample size; n = 41.

A questionnaire was designed to collect the data. The questionnaire had three sections: The first section (A) was the demographic characteristics of the participants such as age, gender, marital status, current level of education, and years of working experience.

Sections B and C were adapted from the Nurses Knowledge and Attitudes Survey regarding pain (NKASRP) Questionnaire [11]. The NKASRP is a 37-item questionnaire. It contains 21 true or false questions and 16 multiple-choice questions with its validity and reliability reported [11]. However, for this study, the NKASRP tool was modified to have 29 questions in all. Section B was about knowledge and attitude of nurses regarding pain management with a total of 17 questions (thirteen true or false questions and four multiple-choice questions). Section C had 12 questions (three true or false questions, two yes/no questions and seven multiple choice questions) which had statements about the practice of pain management in trauma patients and respondents were asked to tick the appropriate answers. This modified questionnaire was piloted among 10 nurses at the Dominase Hospital located in Bekwai Municipal which recorded a Cronbach's alpha coefficient of 0.78 for reliability.

Correct answers were given a score of one (1) and wrong answers were given a zero (0) score. The overall score was derived by adding all the correct responses and converting it into percentages by dividing the total score by 29 and multiplying the outcome by 100 % [(total score/29) ×100 %]. In a previous and similar study, a percentage score of 80 % was used as the minimum score for an adequate knowledge and attitude regarding pain management [12]. Participants with scores less than 80% were classified as not having adequate knowledge and attitude in the management of pain.

COVID 19 hygiene protocols were observed by both respondents and researchers through hand washing or sanitizing, wearing of face masks and observation of social distancing of at least two meters.

Convenience sampling method was used in recruiting the nurses taking into consideration the inclusion criteria. The questionnaires were administered to the respondents who gave consent to participate. The researchers administered the questionnaires over a period of three weeks to get access to the respondents as they

run shifts. Soft copy of the data collected was password protected and backed up to prevent possible loss of data.

In this study, attitude refers to nurses' behaviour toward effective trauma pain management. Knowledge was defined as the cognitive ability of nurses to manage trauma pain. Practice was defined as how nurses implement care of patients with trauma pain and traumatic pain referred to any unpleasant sensory and emotional experience associated with actual or potential tissue damage.

Data Analysis

Data collected was analysed using the IBM SPSS Version 24 (Statistical Package for the Social Sciences). Descriptive statistics were used to summarise data such as age, level of education and gender. Nominal and categorical variables were presented as numbers and percentage. Inferential statistics (independent t-test, one-way ANOVA and Pearson's correlation coefficients tests) were used to examine relationship and association between demographic characteristics of the study participant and their mean score in knowledge and attitude. Results were presented on tables and graphs. P-values which were less than 0.05 were considered as statistically significant.

RESULTS

A total of 41 respondents participated in the study. Twenty-two (53.7%) were females. Majority (n= 34, 82.9%) were between the ages of 26 and 35 years and 18 (43.9%) were senior staff nurses. Twenty-five (61.0%) were from the surgical unit. Years of work experience at the Surgical and Emergency Units ranged from 6 months to 5 years. Most (24, 58.5%) participants had diploma qualification in nursing Table 1.

On assessment of pain management knowledge and attitude among the nurses, majority (88%) correctly answered that narcotic/opioid addiction is defined as a chronic neurobiological disease and that after an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.

About 85.4% correctly indicated that the patient is the most accurate judge of the intensity of his/her pain and about 75.6% also rightly said that children less than 11 years old can reliably report pain so clinicians should not rely solely on the parent's assessment of the child's pain intensity.

About 71.0% each correctly indicated that elderly patients can tolerate opioids for pain relief and benzodiazepines are useful in relief of pain caused by muscle spasm, where as 68.3% each rightly said that patients should not be encouraged to endure as much pain as possible before using an opioid and that their spiritual beliefs may lead them to think pain and suffering were necessary.

About 68.0% also correctly said that respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months and 61.0% of the participants answered correctly that patients experiencing pain would request for increase doses of pain medication.

About 42.0% correctly said opioid dependent patients experience sweating, yawning, diarrhoea, and agitation when it is abruptly discontinued. Thirty-nine percent of nurses correctly indicated that 10mg IV morphine administered over 4 hours is equal to 30mg of oral morphine given every 4 hours. About 34.1% correctly said it was false that children under two years of age have decreased pain sensitivity and limited memory of painful experiences. About 29.0% correctly indicated that it was false to assume that patients who can be distracted from pain usually do not have severe pain. About 24.0% said it is true that patients can sleep despite severe pain. Only 3 (7.3%) correctly answered that patients can be given opioids during pain evaluation. On the average each participant correctly answered 9 questions out of the total 17 questions about knowledge and attitude of nurses regarding pain management Table 2.

Findings from the practice of pain management among the nurses revealed a low performance with an average of 39.4%. Majority (80.5%) of the respondents correctly said that the recommended route for opioid analgesic is intravenous and 68.3% rightly indicated that combining analgesic with different mechanism route is better than single dose route of analgesic. Twenty-two (53.6%) of the respondents had pain assessment tool in their wards. Out of those who had a pain assessment tool, 6 (14.6%) used it always and 16 (39.0%) used it occasionally. Twenty-one (51.2%) of the respondents indicated that they have been trained in pain management. Other findings are presented on table 3.

Figure 1 shows a weak but positive relationship between nurses' knowledge and attitude and practice of pain management in trauma patients with a correlation value, $\rho = 0.171$. However, the relationship was not statistically significant (p-value = 0.286).

From table 4, the mean total score for knowledge and attitude was 51.1±10.9%. The maximum score was 69.0% and the minimum score was 24.1%.

From the one-way ANOVA on table 5, there was an association between mean score in knowledge and attitude and educational level (p-value = 0.001) and also between mean score in knowledge and attitude and job rank (p-value = 0.001). The results of the independent t-test showed a significantly higher mean score of nurses who had previous training regarding pain management compared to those who had no previous training. However, the difference in mean score was not statistically significant (p-value = 0.182).

Table 1: Demographic Characteristics of Nurses

Demographic Characteristics	Frequency (n)	Percentage (%)
Age 18-25	-	-
26-35	34	82.9
36-45	6	14.6
46+	1	2.4
Gender Male	19	46.3
Female	22	53.7
Rank Staff Nurse	7	17.1
Enrolled Nurse	3	7.3
Senior Staff Nurse	18	43.9
Senior Enrolled Nurse	3	7.3
Nursing Officer	7	17.1
Senior Nursing Officer	1	2.4
Principal Nursing Officer	2	4.9
Unit Emergency	16	39.0
Surgical	25	61.0

Table 2: Knowledge and attitude of pain management among the nurses

Number	Questions	Frequency (%)
1.	Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviours that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.	36(87.8)
2.	After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.	36(87.8)
3.	The most accurate judge of the intensity of the patient's pain is the patient.	35(85.4)
4.	Children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parent's assessment of the child's pain intensity.	31(75.6)
5.	Elderly patients cannot tolerate opioids for pain relief.	29(70.7)
6.	Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.	29(70.7)
7.	Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.	28(68.3)
8.	Patients should be encouraged to endure as much pain as possible before using an opioid.	28(68.3)
9.	Patients' spiritual beliefs may lead them to think pain and suffering are necessary.	28(68.3)
10.	The most likely reason a patient with pain would request increased doses of pain medication is that the patient may be experiencing increased pain.	25(61.0)
11.	Following abrupt discontinuation of an opioid, physical dependence is manifested by sweating, yawning, diarrhoea and agitation with patients when the opioid is abruptly discontinued.	17(41.5)
12.	Morphine 10 mg IV of morphine administered over a 4hours period would be equivalent to 30 mg of oral morphine given 4 hours.	16(39.0)
13.	Vital signs are always reliable indicators of the intensity of a patient's pain.	15 (36.6)
14.	Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.	14(34.1)
15.	Patients who can be distracted from pain usually do not have severe pain.	12(29.3)
16.	Patients may sleep despite severe pain.	10(24.4)
17.	If the source of the patient's pain is unknown, opioids should not be used during the pain evaluation period, as this could mask the ability to correctly diagnose the cause of pain.	3(7.3)

Table 3: Practice of pain management among nurses

Number	Statements with correct answers	Frequency (%)
1.	The recommended route of administration of opioid analgesics for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is intravenous.	33(80.5)
2.	Combining analgesics that work by different mechanisms (e.g., combining an NSAID with an opioid) may result in better pain control with fewer side effects than using a single analgesic agent.	28(68.3)
3.	Analgesics for post-operative pain should initially be given.	25 (61.0)
4.	Opioids should not be used in patients with a history of substance abuse.	15(36.6)

Number	Statements with correct answers	Frequency (%)
5.	Patient A: Andrew is 25 years old and this is his first day following abdominal surgery. As you enter his room, he smiles at you and continues talking and joking with his visitor. Your assessment reveals the following information: BP = 120/80; HR = 80; R = 18; on a scale of 0 to 10 (0 = no pain/discomfort, 10 = worst pain/discomfort) he rates his pain as 8.	15(36.6)
6.	The recommended route of administration of opioid analgesics for patients with persistent trauma-related pain is oral.	7(17.1)
7.	Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.	4(9.8)
8.	Your assessment, above, is made two hours after he received morphine 2 mg IV. Half hourly pain ratings following the injection ranged from 6 to 8 and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2/10 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief. Administer morphine 3 mg IV now.	2(4.9)
9.	Presence of pain assessment tool in your Ward.	22(53.7)
10.	Always using the pain assessment tool in your Ward.	6(14.6)
11.	Have had training on pain management since starting work as a nurse.	21 (51.2)
12.	Have had training on pain management less than or about two years ago.	14(34.1)

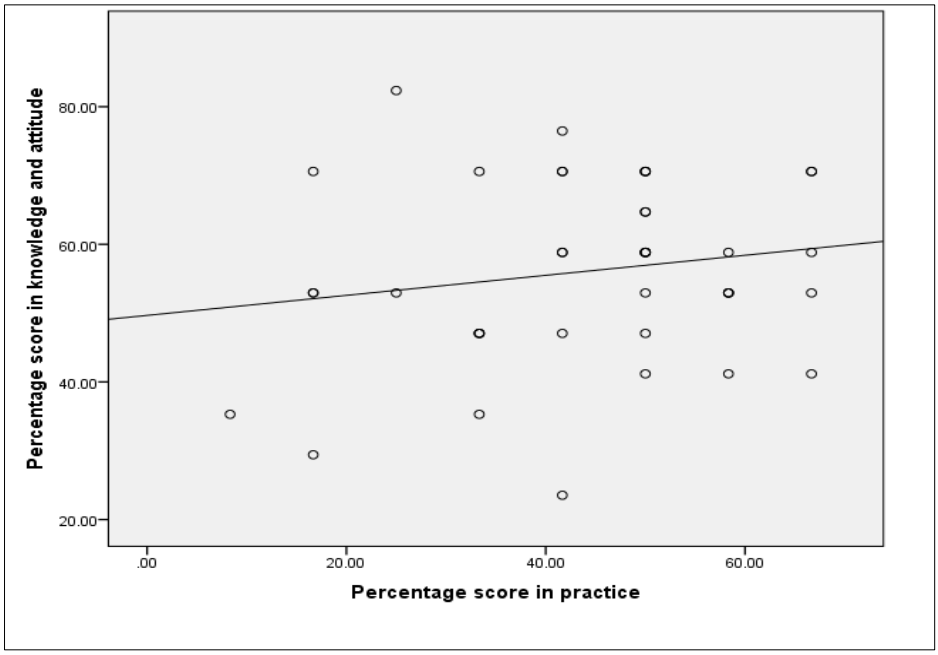

Figure 1: knowledge and attitude in relation to practice

Table 4: Means and standard deviation of the computed variable score

Scores	N	Mean score	SD	Minimum	Maximum
Score from 29	41	14.8	3.1	7.0	20.0
Score from 100	41	51.1	10.9	24.1	69.0

Table 5: Level of knowledge and attitude in relation to demographic characteristics of participants

Demographic characteristic	N (%)	Mean score in knowledge and attitude Mean ± SD	F or t statistics	P-values
Age 18-25 26-35 36-45 46+	- 34(82.9) 6(14.6) 1(2.4)	- 14.9±2.9 14.0±4.5 18.0±0.0	F= 0.707	0.499
Gender Male Female	19(46.3) 22(53.7)	15.1± 3.2 14.6± 3.2	t = 0.174	0.679
Previous training in pain Yes No	 21(51.2) 20(48.8)	 15.5± 2.7 14.2± 3.5	t= 1.850	0.182

Demographic characteristic	N (%)	Mean score in knowledge and attitude Mean ± SD	F or t statistics	P-values
Education			F= 15.000	0.001*
Certificate	6 (14.6)	10.2± 3.7		
Diploma	24 (58.5)	15.1± 2.3		
Degree	11 (26.8)	16.8± 1.7		
Years of experience			F = 0.597	0.621
Less than 6 months	7 (17.1)	14.7± 2.1		
6 months to 2 years	16 (39.0)	14.1± 3.9		
3 to 5 years	12 (29.3)	15.8± 1.8		
More than 5 years	6 (14.6)	15.0± 3.2		
Rank			F = 7.898	0.001*
Staff Nurse	7(17.1)	13.9± 2.8		
Enrolled Nurse	3(7.3)	12.7± 3.8		
Senior Staff Nurse	18(43.9)	15.6± 1.9		
Senior Enrolled Nurse	3(7.3)	7.7± 1.2		
Nursing Officer	7(17.1)	16.6± 2.0		
Senior Nursing Officer	1(2.4)	17.0± 0.0		
Principal Nursing Officer	2(4.9)	18.0± 0.0		
Unit of work			t = 1.193	0.281
Emergency	16 (39.0)	15.5±3.2		
Surgical	25 (61.0)	14.4±3.1		

*Statistically significant difference or association.

DISCUSSION

Trauma pain has been widely reported as a major public health challenge globally [13, 14]. Ineffective pain management is known to be a very common phenomenon leading to several health implications [15].

This study examined the practice of trauma pain management among nurses at the Surgical and Emergency Units of the Bekwai Municipal Hospital. A total of 41 nurses participated in the study. There was a female preponderance as the nursing profession is mostly dominated by females globally [16]. According to Battice [17], the health care profession is regarded as a natural female activity as women are known to exhibit naturally some sort of caring abilities compared to males.

Findings from the current study showed a poor performance by participants in knowledge and attitude in traumatic pain management at the Bekwai Municipal Hospital. Other similar studies in Asia and the Middle East have also recorded poor knowledge and attitude in traumatic pain management among nurses [8, 18]. This poor or inadequate knowledge and attitude in the current study could emanate from lack of documentation of pain protocols and inadequate continuous health education on pain management in this facility. In some units at the study site, written protocols for the assessment and management of pain were not available at the time of the study. This may have a significant effect on pain management activities in such units there by affecting the quality of life of patients.

Other studies have cited lack of multimodal approach to pain management, poor pain documentation, unavailability of essential analgesic drugs, and lack of continuous medical education after graduation as reasons attributed to this poor or inadequate knowledge and attitude in pain management [19, 20]. Education in pain management yields significant result in terms of the enhancement of knowledge and attitude and practice for health care professionals who are involved in pain management [7, 19].

Another reason that could contribute to these insufficiencies in knowledge and attitude in pain management is lack of attention given to pain assessment and management courses in nursing schools. It is also reported that most nursing schools do not dedicate adequate sessions in their curricula for pain management [20]. From this observation, there is a need to revise the curricula of nursing education programs to significantly incorporate the teaching of pain management since nursing plays a significant role in health care delivery.

The relationship between nurses' knowledge and attitude and practice of pain management in trauma patients was assessed. There was a weak but positive relationship between nurses' knowledge and attitude and practice of pain management in trauma patients. The relationship was, however, not statistically significant. This situation was also observed in the study by Abdalrahimet *et al.*, [7], and Yava *et al.*, [21]. It is possible that a multi-centre study with a large sample size could create a stronger positive correlation with statistical significance.

In analysing the level of knowledge and attitude in relation to demographic characteristics of study participants, findings revealed a significant difference in knowledge score among nurses with various educational

levels and job ranks. Nurses with higher educational level (university degree) in this study recorded a higher score in knowledge and attitude than those with lower educational level (diploma and certificate holders). This could be attributed to the fact that the nursing curricula at the degree level of education is more enhanced compared to the diploma and certificate levels. Although not statistically significant, it was observed in this current study that nurses who had previous training in pain management reported a higher knowledge and attitude score than those without previous training in pain management. Other studies have also confirmed that nurses with previous training in pain management had higher mean score than those without previous training [7-21].

Considering the working area or unit of work, the study recorded a higher mean score of knowledge and attitude in pain management for those working at the emergency unit than those working at the surgical unit. The difference in mean score was however not statistically significant. Similarly, in a study by Salameh [22], no statistically significant difference in knowledge was observed between nurses who work in a similar setting in Palestine. However, findings from a study conducted in Turkey reported a significant difference in relation to the unit of work and knowledge and attitude in pain management [21]. This difference between the current study and the study by Yava *et al.*, [21], may be attributed to our small sample.

This current study does not allow for generalization of the findings to the entire nursing population as it was carried out in just one municipal hospital and at the surgical and emergency units. The results of the study would have been different if a multicentre study was conducted. However, these findings could contribute to academic knowledge and research on traumatic pain management since the selected health facility in this study is a keys player in healthcare delivery in Ghana.

CONCLUSION

Nurses at the Emergency and Surgical Units at the Bekwai Municipal Hospital had poor knowledge and attitude in traumatic pain management.

We recommend the need for health facilities to design training schemes for trauma pain management and emergency care delivery to ensure service excellence and improved health outcomes. Nurses should be empowered to acquire sufficient knowledge with good attitude in the management of trauma related pain through in-service training, self-directed learning, and other online health related resources on pain management. Hospital management should also encourage and support the promotion or use of local scientific appropriate technologies which could be tailored towards improving the management of pain in health facilities. Health facilities should have in placed a well-documented pain management guidelines and protocols at the emergency and surgical units to facilitate the management of patients presenting with traumatic pain.

DECLARATIONS

Ethical Considerations

Anonymity of study participants was observed with codes assigned to each participant. All protocols with respect to studies involving human subjects under the Helsinki Declaration were followed accordingly.

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Author Contributions Statement

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Data Availability

Data for this study is available upon request. All request for data must be submitted to the corresponding author.

REFERNCES

1. Keene, D. D., Rea, W. E., & Aldington, D. (2011). Acute pain management in trauma. *Trauma*, *13*(3), 167-179.
2. Ahmadi, A., Bazargan-Hejazi, S., Zadie, Z. H., Euasobhon, P., Ketumarn, P., Karbasfrushan, A., ... & Mohammadi, R. (2016). Pain management in trauma: a review study. *Journal of Injury and Violence Research*, *8*(2), 89. doi: 10.5249/jivr.v8i2.707. Epub 2016 Jul 7. PMID: 27414816; PMCID: PMC4967367.
3. Macintyre, P. E., Schug, S. A., Scott, D. A., Visser, E. J., & Walker, S. M. (2010). *Acute pain management: scientific evidence*. Australian and New Zealand College of Anaesthetists.
4. Modanloo, M., Sayed Fatemi, N., Bastani, F., Peyrovi, H. A. M. I. D., Behnampour, N., & Hesam, M. (2010). Comparison of pain assessment by patients and triage nurses. *Iranian J Crit Care Nurs*, *4*(1), 23-8.
5. Pretorius, A., Searle, J., & Marshall, B. (2015). Barriers and enablers to emergency department nurses' management of patients' pain. *Pain Management Nursing*, *16*(3), 372-379.
6. Yaqoob, S. H., & Nasaif, H. A. (2015). Nurses' knowledge and attitudes toward pain assessment and management for adult sickle cell disease patients during sickling crisis. *Stud*, *3*(4), 36-43.
7. Abdalrahim, M. S., Majali, S. A., Stomberg, M. W., & Bergbom, I. (2011). The effect of postoperative pain management program on improving nurses' knowledge and attitudes toward pain. *Nurse education in practice*, *11*(4), 250-255. doi: 10.1016/j.nepr.2010.11.016. Epub 2010 Dec 24. PMID: 21186139.
8. Wang, H. L., & Tsai, Y. F. (2010). Nurses' knowledge and barriers regarding pain management in intensive care units. *Journal of clinical nursing*, *19*(21-22), 3188-3196. doi: 10.1111/j.1365-2702.2010.03226.x. PMID: 20529163.
9. Berardinis, B. D., Magrini, L., Calcinaro, S., Castello, L. M., Avanzi, G. C., Semplicini, A., ... & Somma, S. D. (2013). Emergency department pain management and its impact on patients' short term outcome. *The Open Emergency Medicine Journal*, *5*(1).
10. Israel, G. D. (2003). Determining sample size degree of variability. *Univ Florida*, *7*, 1-5.
11. Ferrell, B. R., & McCaffery, M. (2014). Knowledge and Attitudes Survey Regarding Pain. Revised. Available from http://prc.coh.org.
12. McCaffery, M., & Robinson, E. S. (2002). Your patient is in pain—here's how you respond. *Nursing2022*, *32*(10), 36-45.
13. Olateju, A. O., Adekunle, D., Saliu, A., & Layiwola, A. (2016). Oluyimika yebamiji E, Adebayo OO. Oligoanalgesia in emergency department: economical use of analgesia a cause for concern. *Int J Recent Sci Res*, *7*(5), 11180-4.
14. Todd, K. H., Ducharme, J., Choiniere, M., Crandall, C. S., Fosnocht, D. E., Homel, P., ... & PEMI Study Group. (2007). Pain in the emergency department: results of the pain and emergency medicine initiative (PEMI) multicenter study. *The journal of pain*, *8*(6), 460-466. doi: 10.1016/j.jpain.2006.12.005. Epub 2007 Feb 15. PMID: 17306626.
15. Dunwoody, C. J., Krenzischek, D. A., Pasero, C., Rathmell, J. P., & Polomano, R. C. (2008). Assessment, physiological monitoring, and consequences of inadequately treated acute pain. *Pain Management Nursing*, *9*(1), 11-21. doi: 10.1016/j.jopan.2007.11.007. PMID: 18226790.
16. WHO. State of the world's nursing 2020: investing in education, jobs and leadershiple [Internet]. 2020. Available from: https://www.who.int/publications/i/item/9789240003279.
17. Battice, J. (2010). The changing face of nursing in a developing country. *J Clin Nurs*, *19*, 1765–6.
18. D'emeh, W. M., Yacoub, M. I., Muhammad, W. D., Talal, H. A., & Batool, S. (2016). Pain-related knowledge and barriers among Jordanian nurses: a national study, *Health*, *8*(6), 548–558, View at: Publisher Site | Google Scholar.
19. Thapa, P., Kc, B., Lee, S. W. H., Dujaili, J. A., Gyawali, S., Mohamed Ibrahim, M. I., & Alrasheedy, A. A. (2022). Managing Pain in Low Resource Settings: Healthcare Professionals' Knowledge, Attitude and Practice Regarding Pain Management in Western Nepal. *Journal of Pain Research*, 1587-1599.
20. Kahsay, D. T., & Pitkäjärvi, M. (2019). Emergency nurses knowledge, attitude and perceived barriers regarding pain Management in Resource-Limited Settings: cross-sectional study. *BMC nursing*, *18*(1), 1-13.
21. Yava, A., Çicek, H., Tosun, N., Özcan, C., Yildiz, D., & Dizer, B. (2013). Knowledge and attitudes of nurses about pain management in turkey. *International Journal of Caring Sciences*, *6*(3).
22. Salameh, B. (2018). Nurses' knowledge regarding pain management in high acuity care units: A case study of Palestine. *International journal of health sciences*, *12*(3), 51. http://www.ncbi.nlm.nih.gov/pubmed/29896072%0Ahttp://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC5969775.

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