

The factors affecting nurses' assessments toward pain management in Saudi Arabia

ABSTRACT

Background and Aims: Pain assessment requires an extensive practice in diagnosis coupled with proficiency in recognizing health factors that lead to its occurrence. Nurses' education and training could be the main factor influencing pain perception and diagnosis. This study aims at comparing nurses' academic qualifications and relevant training courses that may impact their assessment skills toward patients in pain.

Methods: A descriptive cross-sectional design using a Knowledge and Attitudes Survey Regarding Pain questionnaire was administered to a total of 247 nurses. In this survey, the nurses were asked to answer specific questions related to correctly diagnosing and assessing patients' pain, as well as answer questions about their previous training in pain assessment.

Results: A total of 247 nurses answered the questionnaire, with an overall response rate of 82%. Questionnaires revealed that more than half (50.6%) of the nurses involved in this study have not received any pain education related to pain management in the 5 years following their initial nursing licensure or supervision under a nurse supervisor.

Conclusions: The results of the paper show that nurses' experiential level has the highest impact on their knowledge of pain relief management and medications necessary for treating it. Also, nurses' pain education following their initial licensure and during their professional practice has the second highest impact on their pain relief management knowledge, whereas their primary nursing education had the lowest.

Key words: Level of education; nursing; pain assessment; pain management; Saudi Arabia

Introduction

In health-care settings, patients rely heavily on nurses to help them better manage their pain as they represent the largest health-care profession in hospitals and have the greatest contact with patients. Nurses' educational attainment and continuous training could be the major factor affecting pain management perception.^[1] If pain is left untreated, then it can have detrimental effects on patients' mental, psychological, and physiological well-being.^[2] Therefore, nurses are


obligated to be knowledgeable on pain assessment and management to help guide patients through their extreme discomfort.^[3]

Many studies captured and demonstrated the obstacles of delivering adequate pain management. The most common obstacles facing health-care professionals in treating patients' pain symptoms were inadequate pain education; knowledge about the various types of medication; understanding of

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the importance of assessing a patient's pain levels; proper documentation and description of a patient's pain symptoms and medications prescribed to them; and dissociative attitudes toward opioid users and their behavior when seeking medication in the presence of an over-sedation risk.^[2,3] Furthermore, these research studies noted that nurses showed misconceptions about pain perception and assessment.^[4-6] These misconceptions included nurses believing that patients were falsely complaining about pain, that opioids caused immediate addiction if prescribed for pain management, and that a patient's vital signs were the main indicator for assessing their pain levels.^[7]

Knowledge and attitudes affect nurses' pain management aptitude.^[8] Older studies showed reduced understanding of pain management in nurses working in adult wards.^[2,9] Nevertheless, the variation between nurses' experiences and beliefs of pain management was obvious, implying that some nurses may present proper approaches toward pain management but have very inadequate knowledge of how to treat pain.^[10,11] A study observed that nurses had a weak understanding of and poor experience in pain management, which were caused by their low-income status, knowledge, and misperception of pain management.^[12]

Data show that 50% of health-care personnel significantly lack pharmacology education in the therapeutic benefits of pain medications and their related side effects.^[13,14] According to Wengström (2014), having a proper nursing and pain management education has a positive impact on the patient's pain and health outcomes. Health-care workers' training and education can facilitate the improvement of best practices in patients' pain relief and outcomes by collaborating with multidisciplinary teams in pain diagnoses, maximization of quality healthcare, and patient trajectory.^[15-17]

Several studies observed health providers' knowledge in pain management skills. De Silva and Rolls (2011) assessed Sri Lankan nurses' approaches and beliefs toward cancer pain management. It revealed poor attitudes toward pain management because of nurses' limited knowledge of patients' symptoms.^[18] Lui (2008) administered the nurses' knowledge and attitude questionnaire to 147 Chinese nurses in medical units. The study found that the nurses used improper practices and had weak knowledge in pain management too.^[6] Recently, Rao (2012) focused on continuing education for nurses to improve their knowledge, beliefs, and attitudes toward pain management as well as the knowledge.^[19]

Rao's focus on providing continuing education to nurses, for purposes of improving their knowledge of pain

management is similar to Wilson's study (2011). Wilson explained that nurses' level of exposure to pain management depends primarily on their patient units and wards. For example, some nurses in the United Kingdom working in hospice and long-term rehabilitation showed a higher understanding of pain management skills and interventions than other nurses in the UK who worked primarily in general hospitals.^[20] These experiential differences can be overcome if health-care providers frequently check local protocols and any recent changes to pharmacological pain interventions that can prevent them from using improper techniques and practices on patients.^[6,21] An inclusive literature review stressed many obstacles that affect nurses' experience level in pain management, including religious, sociological, and educational perspectives.^[22]

Methods

Design

A knowledge and attitudes survey questionnaire was administered to randomly selected nurses in four hospitals in Riyadh, Saudi Arabia, with 247 nurses participating. Data were analyzed using the Statistical Package for the Social Sciences software (IBM Statistic SPSS; version 23).

Setting and participants

The four Riyadh hospitals were King Khalid University Hospital, King Fahad Medical City, King Khalid University Hospital, and Prince Mohammed Bin Abdulaziz Hospital, which represent the health-care sector in the northern, central, and southern regions of Riyadh city, within the Kingdom of Saudi Arabia. All selected hospitals were referral hospitals.

The study participants were nurses from the hospitals' oncology, burn, ICU, emergency, and operation units. Initially, 300 nurses were selected as a sample unit; this unit was calculated using a sample size calculator from the Creative Research Systems website.^[23] The selected nurses must have worked in a hospital setting for at least 6 months and held at least an associate degree in Nursing. Nurses who did not have associate degree were excluded from the selection.

Instruments

The following instruments were used in this study:

The Demographical Data Sheet: It included questions to elicit information about participants' demographic characteristics, such as their sex, age, education level, acquired pain education after professional licensure, hospital unit, and length of their clinical experience.

The Knowledge and Attitudes Survey Regarding Pain (KASRP): It is a 38-item questionnaire developed by Ferrell and their colleagues to assess nurses' knowledge and attitudes toward pain management.^[24] It consists of 22 "True" or "False" questions and 16 multiple choice questions. The KASRP has an established content validity, which has been verified by a panel of pain experts. The KASRP content was based on the American Pain Society, the World Health Organization, and the Agency for Health Care Policy and Research pain management guidelines. The KASRP Cronbach's alpha is 0.70 and its test-retest reliability is greater than 0.80.^[16,25] However, the drug names in the questionnaire were checked for their availability and use in the hospitals since this tool was developed and used in the United States and Europe. No permission was required to use the questionnaire because the authors granted permission for others to use their instrument.

The Barriers Questionnaire II: This tool was created by Dr. Sandra Ward and her colleagues at the University of Wisconsin-Madison to identify mistakes and other barriers to effective pain management.

Results

Sample characteristics

Out of 300 nurses who volunteered for the study, 247 responded from four hospitals in Riyadh, Saudi Arabia. The results show that 89.6% of the nurses involved in this study were women [Table 1], and the participant's average age was 32.93 years (SD 7.95), with ages ranging from 23 to 60 years old [Table 1]. The results also show that 67.2% of participants had a diploma in nursing, 25.9% had a bachelor's degree, and 0.4% had a master's in nursing [Table 1]. In terms of nationality, 43.1% of the nurses were Indian, 30% were Saudi, 21.3% were Filipino, and 5.6% were of different national origins. More importantly, the results of the valid responses indicate that 53.6% of the nurses had previous pain education, whereas 46.3% of the respondents did not.

Tests of dependence

Chi-square test was used to investigate the dependence between education, pain education, years of experience from one side, and the nurses' answers regarding pain assessment skills and management. The second non-parametric test used is the Spearman rho to investigate the sign of the relationship between having previous pain education and the nurses' ability to answer the questions regarding pain management.

Tests of causation

The first set of tests tested the presence of the relationship. In contrast, the causation tests tested whether experience,

Table 1: Nurses' demographic and professional characteristics (n=247)

Characteristic	Mean (SD)	n* (%)
Age (years)	32.9 (7.9)	
Nursing experience (years)	9.1 (6.65)	
Gender		
Male		24 (10.4)
Female		207 (89.6)
Nationality		
Saudi		48 (30)
Indian		69 (43.1)
Filipino		34 (21.3)
Other		9 (5.6)
Education level		
Diploma		166 (71.9)
Bachelors		64 (27.7)
Masters		1 (0.4)
Hospital unit		
Medical and surgical		59 (37.8)
Oncology		34 (21.8)
Intermediate and intensive care units (ICU)		49 (31.4)
Emergency and operation units		14 (9.0)
Other		93 (37.7)
Previous pain education		
No		108 (46.4)
Yes		125 (53.6)

education, and previous pain education had a direct causal effect on the nurses' answers. The analysis of variance (ANOVA) test was used to investigate the causal relationship between having previous pain education, education, and experience on the one hand, and the answers of the nurses regarding medicines and pain management on the other. The F test was used instead of the t-test because the sample was larger than 30. The F test could also replace the t-test when the independent variables are run separately in regression models. Accordingly, the results showed the impact and significance of the experience, education, and previous pain education on nurses' answers regarding their knowledge and pain management skills.

The second method used to identify the relationship between the pain education and the pharmaceutical knowledge, and evaluation of the pain of the patients by the nurses was the non-parametric Spearman rho coefficients to determine the correlation between different categorical variable.

The cross-tabulation between the variable representing the post-licensing pain education with a categorical variable representing the surveyed nurses' answers regarding the ability of patients experiencing severe pain to sleep found that around 20.43% of nurses stated that patients experiencing severe pain could sleep. The Chi-square test showed a significant relationship between the two

categorical variables ($\chi^2 = 8.969, P = 0.003 < 0.01$) [Table 1], which means that the pain education and nurses' answers regarding the ability of patients experiencing severe levels of pain to sleep are dependent. The correlation test shows a -0.197^* correlation coefficient (Spearman rho, $P = 0.003 < 0.01$) [Table 1], showing that pain education after licensing is associated with an almost 20% lesser likelihood of claiming that patients with severe pain can sleep (e.g., a nurse with post-graduate pain education is less likely to provide a wrong answer). The results also showed no significant relationship between a nurse's level of education and years of experience in answering this question. A possible explanation is that pain education after licensing builds on a nurse's education and experiences to provide them with higher skills and knowledge to understand pain management, thereby explaining the positive significant correlation between the number of years of experience and having post-licensing pain education ($r = 0.219, P < 0.01$) [Table 2]. These results show that a 1-year increase in nurses' experience is associated with a 21.9% increased likelihood of having previous pain education after initial licensure.

To investigate the nurses' pharmaceutical knowledge and their ability to differentiate certain medicines' role in treating pain, nurses were asked if the statement "Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases" was true or false. The results showed that Chi-square test testing the dependence between having a post-licensing pain education variable and the answer to the statement "Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases" was 8.337 ($p = 0.004, P < 0.01$) [Table 2]. Therefore, these

two variables were dependent. The Spearman rho results also supported the conclusions of the dependence test and the cross tabulation ($r = 0.192, P = 0.004 < 0.01$) [Table 3]. These results indicated that having pain education after licensing is associated with an almost 19.2% decreased likelihood of claiming that Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.

Moreover, to investigate the nurses' pharmaceutical knowledge and their ability to differentiate certain medicines' role in treating pain, nurses were asked if the statement, "Opioids should not be used in patients with a history of substance abuse," was true or false. The study used the non-parametric Chi-square test, cross-tabulation, and the non-parametric Spearman rho. The results showed that the Chi-square testing the dependence between having a post-licensing pain education variable and the answer to the statement "Opioids should not be used in patients with a history of substance abuse" was 14.627 ($p = 0.000 < 0.001$) [Table 2]. Therefore, these two variables were dependent. The Spearman rho results also supported the conclusions of the dependence test and the cross tabulation ($r = -0.253, P = 0.000 < 0.001$) [Table 3]. These results indicated that previous post-licensing pain education was associated with a 25.3% decreased likelihood of answering incorrectly that patients with past opiate abuse should not be prescribed pain medication (those with previous pain education were 25.3% less likely to give the wrong answer).

The Chi-square test indicated that there was a significant dependence relationship between previous post-licensing

Table 2: Chi-square test of dependence

Question		Years of experiences	Education level	Previous pain education
Patients may sleep in spite of severe pain	Pearson Chi-square	32.506	0.356	8.969
	Sig. (2-tailed)	0.254	0.756	0.003
	n	196	228	230
Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases	Pearson Chi-square	44.4	0.751	8.337
	Sig. (2-tailed)	0.221	0.687	0.004
	n	193	226	227
Opioids should not be used in patients with a history of substance abuse.	Pearson correlation	50.795	0.651	14.627
	Sig. (2-tailed)	0.005	0.722	0.000
	n	194	226	228
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.	Pearson Chi-square	35.566	1.459	11.241
	Sig. (2-tailed)	0.154	0.482	0.001
	n	197	229	231
Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.	Pearson Chi-square	55.795	1.579	7.994**
	Sig. (2-tailed)	0.001	0.454	0.005
	n	179	211	213

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed)

Table 3: Correlations (Spearman's rho)

Correlations (Spearman's rho)		Years of experiences	Education level	Previous pain education
Patients may sleep in spite of severe pain	Spearman's rho	-0.126	-0.025	-0.197**
	Sig. (2-tailed)	0.079	0.705	0.003
	<i>n</i>	196	228	230
Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases	Spearman's rho	-0.129	-0.044	-0.192**
	Sig. (2-tailed)	0.073	0.510	0.004
	<i>n</i>	193	226	227
Opioids should not be used in patients with a history of substance abuse.	Spearman's rho	-0.229**	-0.037	-0.253**
	Sig. (2-tailed)	0.001	0.583	0.000
	<i>n</i>	194	226	228
Patients should be encouraged to endure as much pain as possible before (before what?)	Spearman's rho	0.180*	0.203**	-0.006
	Sig. (2-tailed)	0.014	0.003	0.929
	<i>n</i>	184	216	218
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.	Spearman's rho	-0.177*	-0.077	-0.221**
	Sig. (2-tailed)	0.013	0.249	0.001
	<i>n</i>	197	229	231
Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.	Spearman's rho	-0.092	-0.104	0.041
	Sig. (2-tailed)	0.202	0.120	0.535
	<i>n</i>	193	225	227
Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm.	Spearman's rho	0.285**	0.043	0.194**
	Sig. (2-tailed)	0.000	0.532	0.005
	<i>n</i>	179	211	213

pain education and providing the correct answer to the True or False statement “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” ($X^2 = 14,627, P = 0.000 < 0.001$) [Table 2]. The spearman rho results confirmed these results (Spearman rho = -0.221, $P = 0.001 < 0.01$) [Table 3], indicating that previous post-licensing pain education was associated with a 22.1% decreased likelihood of answering “True” to the statement (nurses who have previous pain education were 22.1% less likely to give the wrong answer).

The Chi-square test results to the true or false statement, “Benzodiazepines are not effective pain relievers,” indicated that there was a significant dependence between previous post-licensing pain education and providing the correct answer to this statement ($X^2 = 7,994, P = 0.005 < 0.01$) [Table 2]. The Spearman rho showed that having previous pain education was associated with 19.2% increased likelihood of providing the right answer to this statement (Spearman rho = -0.192**, $P < 0.01$) [Table 3].

The ANOVA table and the F tests show that a nurse’s previous pain education has a significant impact on the respondent’s answers for some of the questions. The null hypothesis related to the statement “patients may sleep in spite of severe pain” is rejected, which means that pain education has a significant impact and likelihood of answering the question correctly ($F = 9.252, P = 0.003 < 0.01$). The F

test results also show that pain education has a significant impact on the answers to the following question, “Vital signs are always reliable indicators of the intensity of a patient’s pain” ($F = 955, P = 0.002 < 0.01$), “Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases” ($F = 8,578, P = 0.004 < 0.01$), “Combining analgesics that work by different mechanisms (e.g., combining an opioid with an NSAID) may result in better pain control with fewer side effects than using a single analgesic agent” ($F = 3,831, P = 0.052 < 0.1$), “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” ($F = 15,493, P = 0.000 < 0.01$), “Elderly patients cannot tolerate opioids for pain relief” ($F = 3.225, P = 0.074 < 0.1$), “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” ($F = 11,714, P = 0.001 < 0.01$), and “Benzodiazepines are not effective pain relievers unless the pain is due to the muscle spasm” ($F = 8.228, P = 0.005 < 0.01$). The compare means tests show that pain education has a significant impact on answering different questions about pain management and administered medicines.

The results show that the number of years impacts the respondents’ answers to more questions than the standard nursing education without additional training in pain management. Both a nurse’s years of and level of pain

education had a significant impact of the way respondents answered, "Opioids should not be used in patients with a history of substance abuse," "Elderly patients cannot tolerate opioids for pain relief," and "Benzodiazepines are not effective pain relievers unless the pain is due to muscle spasm questions." The results in Tables 5 and 6 show that a nurse's years of experience, and their level of education significantly impacted their answers about the usual duration of analgesia of 1–2 mg morphine IV being 4–5 h.

The F test results showed that the respondents' years of experience impacted their responses to the following true/false statements: "Patients who can be distracted from pain usually do not have severe pain" ($F = 1,592, P = 0.039 < 0.05$), "The usual duration of analgesia of 1–2 mg morphine IV is 4–5 h" ($F = 1,606, P = 0.037 < 0.05$), "After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response" ($F = 1,556, P = 0.047 < 0.05$), and "Revacod (hydrocodone 5 mg + acetaminophen 500 mg) PO is approximately equal to 5–10 mg of morphine PO" ($F = 1.447, P = 0.082 < 0.1$).

The results in Table 5 show that both a nurse's post-licensing pain education and level of education have a significant impact on their answers to the statement, "Vital signs are always reliable indicators of the intensity of a patient's pain question." Table 4 shows that the level of respondents' education had a significant impact on answering the following statements correctly: "Because their nervous system is underdeveloped, children under two decreased pain sensitivity and limited memory of painful experiences" ($F = 3.528, P = 0.031 < 0.05$), "Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics" ($F = 2.368, P = 0.096 < 0.01$), "Patients should be encouraged to endure as much pain as possible before taking the medicine" ($F = 4.674, P = 0.01 < 0.05$), "Children less than 11 years old cannot reliably report pain so nurses should rely solely on the parent's assessment of the child's pain intensity" ($F = 11.115, P = 0.000 < 0.001$).

Overall, nurses' answers to the questionnaire contained many erroneous answers and the research finds these mistakes were primarily due to (1) a nurses' years of experience, (2) their completion of post-licensing pain education, and (3) their level of education. The cross-tabulations showed that 84.6% of the nurses failed to identify patients who truly needed pain relief versus patients who were seeking drugs because of a prior addiction based on patients' normal set of vital signs, which was supported by the Chi-square analysis results and the F test results.

Table 4: Previous pain education * Patients may sleep in spite of severe pain Crosstabulation

			Patients may sleep in spite of severe pain		Total
			F	T	
Previous pain education	No	Count	76	31	107
		% of Total	41.53%	79.66%	46.5%
	Yes	Count	107	16	123
		% of Total	58.47%	20.34%	53.5%
Total	Count	183	47	230	
	% of Total	79.6%	20.4%	100.0%	

Discussion

Results showed participants had very poor knowledge and attitudes toward pain relief due to their lack of post-licensing training in pain management skills. Overall, study participants demonstrated a lack of pain management knowledge and had several misperceptions regarding opioid use in Saudi Arabia. The average KASRP score for this study was 18.5, which demonstrated that nurses had lower score results than participants in other international studies.^[26,27] It showed consistency with older studies on pain therapy knowledge and attitudes in Middle Eastern countries where similar results were noted in their hospitals.^[28-31] Previous studies confirmed poor pain management skills in nurses working in Saudi Arabia.^[32] For example, Yildirim (2008) evaluated pain therapy approaches in nurses working in the health-care sector of Turkey by utilizing the KASRP questionnaire. Those study participants averaged 35.4 (total correct answers), which was relatively lower than that of the current study.^[33] On the contrary, Eaton (2015) found the opposite, whereby a high percentage of respondents had very good pain management knowledge (73.8%).^[34] The respondents from Yildirim's study scored relatively lower than nurses in the current study. This is probably caused by the insufficiency or inadequacy of pain therapy education in the nursing curriculum as well as nurses' actual clinical training.

The nurses participating in this study reflect the average health-care provider working in Saudi Arabia because they come from a variety of countries. Surprisingly, a substantial variation was found in the KASRP mean scores between nurses from Saudi Arabia, other Middle Eastern countries, the Philippines, and India.^[2,31,35,36] It is noteworthy that the essence of the incorrect questions was related to making value judgments rather than providing factual answers concerning analgesic administration, including the method of judging, and interpreting the level of a patient's pain, and deciding upon the course of action that they would take in response to a given pain management situation. In this

Table 5: Significance of the differences between the proportions due to the years of experience using ANOVA

Questions where the years of experience have a significant impact on giving the right answer	ANOVA Table	
	F	Sig.
Patients who can be distracted from pain usually do not have severe pain. *Years of experience	1.592	0.039
Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months. *Years of experience	1.630	0.032
Combining analgesics that work by different mechanisms (e.g., combining an opioid with an NSAID) may result in better pain control with fewer side effects than using a single analgesic agent *Years of experience	1.736	0.018
The usual duration of analgesia of 1–2 mg morphine IV is 4–5 h. *Years of experience	1.606	0.037
Opioids should not be used in patients with a history of substance abuse. *Years of experience	2.090	0.002
Elderly patients cannot tolerate opioids for pain relief. *Years of experience	1.991	0.004
After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response *Years of experience	1.556	0.047
Revacod (hydrocodone 5 mg + acetaminophen 500 mg) PO is approximately equal to 5–10 mg of morphine PO. *Years of experience	1.447	0.082
Benzodiazepines are not effective pain relievers unless the pain is due to *Years of experience	2.426	0.000

study, nurses thought that fluctuating vital signs indicates the severity of a patient's experienced pain. These irrational beliefs are connected to their pain assessment skills, and this was not found only in this sample of health-care providers. Similarly, Coulling (2005) found out that more than a third of his study's participants (32%) believed that changes in vital signs were associated with pain intensity.^[37] It is very common that the presence of pain can alter activities of daily living and possibly change vital signs but are not the sole indicator of a patient's pain levels. Because of this, nurses believe that actual pain may inhibit patient's ability to sleep. This belief goes back to nurses (45.6%) incorrectly believing that patients who can be distracted easily from pain usually do not have any considerable severity of pain symptoms. Nurses in the study also showed poorer scores on pharmacology questions.^[38-41] This deficit is attributed to misconceptions about pharmacology, particularly analgesics (e.g., opioids) and how they work. This is in line with previous studies that identified items related to pharmacology as being vital to pain management and giving substantial significance to the KASRP survey results.^[2,38]

This study continually showed the lack of knowledge and improper methods used by nurses as well as their false perceptions regarding quick addiction and respiratory depression following the administration of analgesics. Surprisingly, most nurses who participated in this study (74.1%) knew the idea behind addiction but could not define or understand the difference between tolerance, dependence, and habituation. It is less common for patients, who require pain therapy, to become addicted to opioids (i.e., fentanyl, morphine, and tramadol) because addiction is not easily caused in patients receiving analgesics for surgical operations.^[38] The lack of pain therapy practice seems to

be worldwide when it comes to understanding opioid use. Kaki (2011) studied nurses' views ($N = 325$) toward patients' satisfaction when it comes to opiate administration, treatment regimen, and follow-up doses after an initial dose. A small fraction (38.1%) of participants selected morphine as potentially causing addiction if given Pro Re Nata (as needed).^[32]

ANOVA one-way outcomes were an excellent tool to determine the efficacy of having a bachelor's or master's degree versus having an associate degree. This conflicts with what Alqahtani and Jones (2015) found when they noticed a substantial correlation between educational attainment and understanding pain therapy.^[4] Furthermore, nurses taking intensive pain therapy courses and workshops to improve their skills in pain management skills did not change their perception towards pain assessment and management. This has showed significant variation from other studies that highlighted the importance of relevant continuing education offered to nurses.^[4,27,28]

Conclusion

The study brought out the lack of pain assessment and management skills in nurses working in the selected hospitals, particularly because of false ideas and perceptions regarding pain medications. These false perceptions are primarily fueled by nurses' shorter practicing experience in pain management, lack of post-licensing pain education, and their level of education (i.e., an associate degree in nursing versus higher educational attainment). Nurses are the primary health-care pillar when treating critically ill or injured patients because they have the most contact with patients and transfer information about patients' symptoms

Table 6: Significance of the differences between the proportions due to the level of education using ANOVA

Questions where the years of level of education have a significant impact on providing the correct answer	ANOVA Table	
	F	Sig.
Vital signs are always reliable indicators of the intensity of a patient's pain. *Education level	6.889	0.001
Because their nervous system is underdeveloped, children under two have decreased pain sensitivity and limited memory of painful experiences *Education level	3.528	0.031
The usual duration of analgesia of 1–2 mg morphine IV is 4–5 h. *Education level	2.368	0.096
Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics. *Education level	5.350	0.005
Patients should be encouraged to endure as much pain as possible before prescribing pain medication?? *Education level	4.674	0.010
Children less than 11 years old cannot reliably report pain so nurses should rely solely on the parent's assessment of the child's pain intensity. *Education level	11.115	0.000

directly to doctors, who most likely have less time to diagnose and thoroughly monitor each patient. This puts a burden on nurses to correctly document and transmit information about each patient to their doctor, so they can properly diagnose and manage a patient's pain symptoms. However, proper documentation and diagnosis require each health-care provider, especially nurses, to have proper post-licensing training in pain management skills, knowledge in using analgesics to address pain symptoms and understanding of acceptable pharmacological approaches as opposed to erroneous perceptions that can leave patients suffering or with inadequate care. This study does not list all obstacles of effective pain management in nurses as well as assessing benefits of pain management courses and workshops. It encourages the hospitals' management and executive teams to consider training their staff in pain assessment, so their staff will be more capable of appropriately identifying pain symptoms in patients and prescribing the right medication based on best health-care practices.

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Conflicts of interest

There are no conflicts of interest.

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