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Final-Year B.Sc. Nursing student's knowledge and attitude regarding pain management

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ABSTRACT

Pain management is a critical aspect of nursing care, requiring nurses to have sufficient knowledge and appropriate attitudes. Objective: This study aimed to assess the knowledge and attitudes of final-year B.Sc. Nursing students toward pain management. Methods: A descriptive study was conducted among 100 nursing students from various colleges in Haryana. Data were collected using a Student Description Form and the Nurses' Knowledge and Attitudes Survey Regarding Pain (NKASRP). Results: Most of the participants (83%) were aged 22 years or younger. A significant portion (61%) had neither received prior education on pain management nor cared for patients experiencing pain. Despite this, 64% of students felt that their nursing curriculum provided adequate education on pain and its management. However, 43% of students demonstrated poor knowledge and attitudes toward pain management, indicating a considerable gap in understanding and practical application. A statistically significant difference was observed between NKASRP scores and the institution where students were pursuing their final year ($p > 0.001$). Conclusion: Final-year nursing students generally showed poor knowledge and attitudes regarding pain management. Incorporating more structured and standardized, evidence-based pain management education into undergraduate nursing curricula could significantly enhance the quality of patient care and outcomes.

INTRODUCTION

The significance of assessing pain is becoming more widely acknowledged, as it is becoming recognized as a major global public health concern. Every human being in the world has experienced some type or degree of pain for which the individuals get health care. Pain may be an extremely unpleasant and a personal sensation that is not be shared with others; it can occupy all an individual's thinking and alter an individual life, yet pain may be a scary concept for a patient to communicate; a medical staff neither sees nor feels patient's pain.

According to American pain society, Pain is referred as "the fifth vital sign" to stress its significance and to improve attention of health care professionals about the importance of effective pain management strategies, as well as continuous assessment. [1]

Pain is one of the primary symptoms of numerous health issues, and it can be caused by a variety of factors. Studies have reported that 55% to 78.6% of inpatients were measured using 5 wide mouth 2 L. flasks. Each flask experience moderate-to-severe pain. [2] A person's social life, physical, mental, and quality of life are all negatively impacted by pain. In addition, pain results in extended hospital stays and an increase in morbidity and mortality.[3]

The correct assessment of pain is crucial for the effective treatment of pain, which is essential for improving the quality of life and providing comfort. This focus has led to tremendous advancements in evidence-based guidelines, and research regarding the treatment and management of pain, within acutely and chronically ill cancer patients. [4]

In recent years, there has been increasing interest in pain management as a vital part of medical treatment and nurses have a significant role in the evaluation and handling of pain events as they spend the most time liaising with patients in bedside care provision. [5] There are still problems regarding pain management despite

countless training courses, application strategies, and multidisciplinary pain teams. [6]

However, a lack of understanding of the nature of pain and its assessment and treatment has been cited and reported as one of the many reasons for patient suffering worldwide.[7] Nurses' knowledge and attitude towards pain are independent predictors of appropriate practice.[8]

It is widely acknowledged that pain education enhances the knowledge and attitudes of nurses toward pain management.[9,10] Adequate training of nurses on pain assessment and management in health facilities has dramatically improved their knowledge. For example, a review article by Al Reshidi et al. reported that training programmes could improve paediatric nurses' knowledge and attitudes towards pain assessment and management [11] Similarly, a study conducted in the United Arab Emirates showed that nurses' knowledge and attitudes towards pain management improved following an educational programme. [12] As a result, effective pain management improves patient outcomes and satisfaction.[13]

On the other hand, ineffective pain management leads to a lower quality of life [14] However, the knowledge and attitudes of practising nurses were inadequate in most identified studies[15,16] Some research has assessed the knowledge and attitudes of nurses regarding pain assessment who work in high acuity care units, such as medical and surgical units. Using the "nurses' knowledge and attitudes survey regarding pain management," it was found that the medical-surgical units' nurses lacked sufficient knowledge and attitudes regarding pain management.[17]

Basma Salameh in 2018 conducted a case study to assess the nurse's knowledge regarding pain management in high acuity care units on 123 nurses who work in high acuity care units (ICU, CCU, ER, and Pediatric ICU) . After the research it was discovered that The total mean score of correct answers for the 39 questions asked was 17.4 ± 4.2, which is considered to be less than the pass mark of 19.5. they concluded that Palestinian nurses in critical care units possess inadequate knowledge about pain management and there are inconsistencies in their attitudes and practices also. [18]

Khaled, Hammad, et.al. conducted a research with an aim to evaluate nurses' knowledge and attitudes regarding pain assessment and management at King Fahad Hospital, Al-Madinah, Kingdom of Saudi Arabia. A quantitative, cross-sectional survey, using a self-administered questionnaire was used on 660 registered nurses working in the Emergency Department, critical care units, inpatient and outpatient departments at King Fahad Hospital in Al-Medinah, Kingdom of Saudi Arabia. The participants' scores ranged from 17.7% to 100%, with a mean score 45.29%. The majority of the participants (70.1%) had a poor level of knowledge and attitudes (score < 50%). Nurses working in the outpatient department scored significantly higher than the group working in the Emergency Department and inpatient wards. Deficient knowledge and negative attitudes were found and nurses continue to underassess and undertreat pain. [19]

It is widely accepted that Professional nursing skills are a direct result of the knowledge and attitudes that nurses acquire during clinical education and course work.[20]

Therefore, before entering the field, it's critical to comprehend students' attitudes and level of knowledge regarding pain management. Thus, the purpose of this study was to evaluate the knowledge and attitudes of Final year B.Sc. Nursing students regarding the assessment and management of pain in a setting with limited resources.

Methodology

The study was approved by the Institutional Review Board (IRB) of selected College of Nursing. Information was given to all students concerning the objectives of the study, and their oral approval was obtained. A cross-sectional descriptive study was used to examine the nursing students' level of knowledge and attitude concerning pain management. The study population consisted of 100 final semester B.Sc. nursing students. The study was conducted at selected college of nursing, Gurugram. We surveyed all final-semester B.Sc. nursing students. We restricted our study conveniently to the final semester nursing students. These students were expected to be assigned to the ministry of health to work as registered nurses independently within the following few months. Therefore, they are supposed to have adequate knowledge and a proper attitude regarding pain management. All final-semester nursing students who volunteered to participate in the study were included.

The study data were collected using a Student Description Form and the Nurses' Knowledge and Attitudes Survey Regarding Pain (NKASRP). The student description form: This form consisted of 6 questions to specify the students' socio-demographic, educational characteristics and individual experiences of pain management.

Nurses' Knowledge and Attitudes Survey Regarding Pain Scale (NKASRP): The NKASRP was developed by Ferrell, McGuire, and Donovan in 1993.The NKASRP scale assesses nurses' knowledge and attitudes regarding pain management. There are questions on the scale about knowledge and attitudes to pain management, pharmacological and non-pharmacological approaches. Of the 38 questions on the scale, 22 have true/false answers,14 are multiple choice, and 4 additional multiple-choice questions based on 2 case scenarios. [5, 12] According to the KASRP author recommendations, the items are not distinguished as measuring attitude or knowledge because of the overlapping in many items that measure both variables together (knowledge and attitude). The two scenarios are identical with the exception of the patient's behavior. The patient in scenario A was smiling, talking, and joking with his visitors, and the patient in scenario B was lying quietly and grimaced as he turned in the bed. Each true/false answer on the NKASRP was calculated as a percentage. Each correct answer scored 1 point, while an incorrect or unanswered question scored 0. The total score varied between 0 and 38. Correct answer rates were calculated by dividing the total number of correctly answered items by the total number of items. The scores 0-33% were classified as poor, 34-66% acceptable, and 67-100% as good knowledge and attitude. According to Ferrell and McCaffery, the validity and reliability have been established; the test–retest reliability of the KASRP was 0.80 and the internal consistency 0.70 (alpha r). The KASRP questionnaire is available in the public domain and is extensively used in various languages and in different contexts globally.

The collected data were entered into SPSS version 25. Both descriptive and inferential statistics were used to analyse the data. Categorical variables were presented as frequency and per cent, while continuous variables were presented as mean

and standard deviation. An independent t-test was used to compare the presence of a significant difference between two means. The p value of <0.05 was accepted as statistically significant in the entire analysis.

Result

A total of 103 Final semester B.Sc. nursing students were participated but three were excluded due to missing information. In the end, 100 of them were included in the final analysis.

Table 1: Demographic characteristics of Participants. **N=100**

Variables	Frequencies	Percentage
1. Age in yrs.		
a) 22 yrs and below	83	83
b) 23 years and above	17	17
2. Gender		
a. Male	39	39
b. Female	61	61
3. Institution you are currently pursuing your Nursing program		
a. Amity College of Nursing	60	60
b. RR College of Nursing	40	40
4. Previous Education in Pain Management		
a. Yes (If Yes, specify the name of training and where attended)	39	39
b. No	61	61
5. Cared for Someone in Pain Before.		
a. Yes	39	39
b. No	61	61
6. Do you feel your program has provided you with adequate education on pain and pain management?		
a. Yes	64	64
b. No	36	36

Table 1 shows that most of the nursing students (83%) were in the age group of 22 yrs and below, 61% were female , 60% were studying at Amity College of Nursing, 61% had not received previous education in pain management. It is also found that 61 % of students had not cared for someone in pain before and 64% of the students felt that their nursing program has provided them with adequate education on pain and pain management.

Table 2: Percentage of nursing students with correct responses on each item of the KASRP. N=100

Item no	Pain assessment and attitude item	B.Sc. Nursing students answered correctly	
		F (%)	Mean (SD)
1	Vital signs are always reliable indicators of the intensity of a patient's pain.	38 (38%)	0.38 (0.48)
2	Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.	52 (52%)	0.52 (0.50)
3	Patients who can be distracted from pain usually do not have severe pain.	41 (41%)	0.41 (0.49)
4	Patients may sleep in spite of severe pain.	30 (30%)	0.30 (0.46)
5	Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.	50 (50%)	0.50 (0.50)
6	Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months	73 (73%)	.73 (.44)
7	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.	81 (81%)	.81 (.39)
8	The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.	21 (21%)	.21 (.40)
9	Opioids should not be used in patients with a history of substance abuse.	37 (37%)	.37 (.48)
10	Elderly patients cannot tolerate opioids for pain relief.	34 (34%)	.34 (.47)
11	Patients should be encouraged to endure as much pain as possible before using an opioid.	43 (43%)	.43 (.49)
12	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.	42 (42%)	.42 (.49)
13	Patient's spiritual beliefs may lead them to think pain and suffering are necessary.	68 (68%)	.68 (.46)
14	After an initial dose of opioid analgesic is given, subsequent doses should be adjusted in accordance with the individual patient's response.	83 (83%)	.83 (.37)
15	Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.	44 (44%)	.44 (.49)
16	Vicodin (hydrocodone 5 mg + acetaminophen 300 mg) PO is approximately equal to 5 - 10 mg of morphine PO	74 (74%)	.74 (.44)
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.	22 (22%)	.22 (.41)
18	Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose.	46 (46%)	.46 (.50)
19	Benzodiazepines are not effective pain relievers and are rarely recommended as part of an analgesic regiment.	72 (72%)	.72 (.45)
20	Narcotic/opioid addiction is defined as a chronic neurobiologic disease, characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.	80 (80%)	.80 (.40)

21	The term 'equianalgesia' means approximately equal analgesia and is used when referring to the doses of various analgesics that provide approximately the same amount of pain relief.	80 (80%)	.80 (.40)
22	Sedation assessment is recommended during opioid pain management because excessive sedation precedes opioid-induced respiratory depression.	83 (83%)	.83 (.37)
23	The recommended route of administration of opioid analgesics for patients with persistent cancer-related pain is	35 (35%)	.35 (.47)
24	The recommended route of administration of opioid analgesics for patients with brief, severe pain of sudden onset, such as trauma or postoperative pain is	60 (60%)	.60 (.49)
25	Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients?	63 (63%)	.63 (.48)
26	A 30 mg dose of oral morphine is approximately equivalent to:	27 (27%)	.27 (.44)
27	Analgesics for post-operative pain should initially be given	45 (45%)	.45 (.50)
28	A patient with persistent cancer pain has been receiving daily opioid analgesics for 2 months. Yesterday the patient was receiving morphine 200 mg/hour intravenously. Today he has been receiving 250 mg/hour intravenously. The likelihood of the patient developing clinically significant respiratory depression in the absence of new comorbidity is	32 (32%)	.32 (.46)
29	The most likely reason a patient with pain would request increased doses of pain medication is	50 (50%)	.50 (.50)
30	Which of the following is useful for treatment of cancer pain?	17 (17%)	.17 (.37)
31	The most accurate judge of the intensity of the patient's pain is	46 (46%)	.46 (.50)
32	How likely is it that patients who develop pain already have an alcohol and/or drug abuse problem?	45 (45%)	.45 (.50)
33	The time to peak effect for morphine given IV is	39 (39%)	.39 (.49)
34	The time to peak effect for morphine given orally is	21 (21%)	21 (.40)
35	Following abrupt discontinuation of an opioid, physical dependence is manifested by the following:	51 (51%)	.51 (.50)
36	Which statement is true regarding opioid induced respiratory depression	46 (46%)	.46 (.50)
37 A	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. A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew's pain. 0 1 2 3 4 5 6 7 8 9 10 ---------- No pain/discomfort Worst Pain/discomfort	24 (24%)	.24 (.42)
37 B	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." Check the action you will take at this time. 1. Administer no morphine at this time. 2. Administer morphine 1 mg IV now. 3. Administer morphine 2 mg IV now. 4. Administer morphine 3 mg IV now.	10 (10%)	.10 (.30)
38 A	Patient B: Robert is 25 years old and this is his first day following abdominal surgery. As you enter his room, he is lying quietly in bed and grimaces as he turns in bed. 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. A. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Robert's pain: 0 1 2 3 4 5 6 7 8 9 10 ---------- No pain/discomfort Worst Pain/discomfort	24 (24%)	.24 (.42)
38 B	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." Check the action you will take at this time: 1. Administer no morphine at this time. 2. Administer morphine 1 mg IV now. 3. Administer morphine 2 mg IV now. 4. Administer morphine 3 mg IV now.	19 (19%)	.19 (.39)

Table 2 provided the percentage of correct responses given by B.Sc. Nursing Final year students across a range of pain assessment and attitude items related to pain management. It can be seen that there were five

questions that had correct answer scores which passed the 80% threshold on the pain assessment scale, suggesting an adequate level of knowledge. These questions were related to the assessment, use and management of mainly opioid drugs (item no. 22, 83%; item no. 14, 83%; item no. 7, 81%; item no. 21, 80% and item no. 20, 80%). The items which were the least correctly answered were mainly related to both narcotic and opioid agent (item no. 30, 17%; item no. 8 & 34, 21%; item no. 17, 22 %; item no 26, 27%).

Two clinical patient scenarios were presented in the survey (with two questions each). Both scenarios had similar patient clinical data, but different patient' reactions to pain (i.e. different interactions and facial expressions). The lowest number of correctly answered questions for the entire survey was found from case-based scenario items. Only 10 % (n = 10) of the nursing students answered correctly when deciding on the dose of IV Morphine to be administered to a patient who 'smiles at you and continues talking and joking with his visitor' (Item no. 37.B). Furthermore, only 19% (n = 19) of the nursing students have answered correctly when deciding on the dose of IV Morphine to be administered for a patient who 'he is lying quietly in bed and grimaces as he turns in bed' (item no. 38.B).

Table 3. Frequency and Percentage of Scores on the Knowledge Test. N=100

Knowledge and attitude Score Range	Frequency	Percent
Good knowledge and attitude (67-100%)	30	30
Acceptable knowledge and attitude (34-66%)	27	27
Poor knowledge and attitude (0-33%)	43	43

Table 3 provides the distribution of scores on a Knowledge and Attitude Test related to pain management among final year nursing students. 30% of students demonstrated a high level of knowledge and attitude regarding pain management, 27% of students scored in the acceptable range, suggesting that these students have a moderate understanding of pain management principles, but may still need improvement in specific areas. The high percentage (43%) of students falling into the "poor knowledge and attitude" category indicating a substantial gap in understanding and applying pain management principles.

Table 4: Association of knowledge and attitude score with demographic variables. N=100

Variables	N (%)	Mean ± SD	T test	p value
1. Age in yrs.				
• 22 yrs and below	83	1.87±0.83	-.06	0.94
• 23 years and above	17	1.88±0.92		
2. Gender				
• Male	39	1.89±0.82	0.25	0.79
• Female	61	1.85±0.87		
3. Institution you are currently pursuing your Nursing program				
• Amity College of Nursing	60	2.10 ±0.87	3.50	0.001**
• RR College of Nursing	40	1.52 ± 0.67		
4. Previous Education in Pain Management				
• Yes	39	1.82 ± 0.88		
• No	61	1.90 ± 0.83	-0.46	0.64
5. Cared for Someone in Pain Before.				
• Yes	31	1.93 ± 0.85	-0.51	0.60
• No	69	1.84 ± 0.85		
6. Do you feel your program has provided you with adequate pain and pain management education?				
• Yes	64	1.87 ± 0.84	0.07	0.93
• No	36	1.86 ± 0.86		

This table 4 examines the relationship between the knowledge and attitude scores of nursing students with demographic variables. There was a significant difference in the nursing students scores related to the institution they are currently pursuing their nursing program ($t = 3.5$, $p < 0.05$). More specifically, those nursing students who were pursuing their nursing program from Amity college of nursing had significantly higher scores ($M = 2.10$, $SD = 0.87$) than those who were pursuing their nursing program from RR college of nursing ($M = 1.52$, $SD = 0.83$). On the other hand, there was no significant difference was detected between the KASRP and variables such as age, gender, previous education in pain management, cared for someone in pain before and program has provided with adequate pain and pain management education ($p>0.05$).

DISCUSION

This study aimed to evaluate the knowledge and attitudes of final year nursing students toward pain management. The results indicated that the knowledge and attitude of nursing students concerning pain management seemed poor (43%), 30% of students demonstrated a high level of knowledge and attitude regarding pain management and 27% of students scored in the acceptable range. Pain management knowledge and attitude in participant nursing students had a significant relationship with the institution they are currently pursuing their nursing program was 3.50 (2.10 ±0.87). A previous descriptive study as was conducted to determine nursing students' knowledge and attitudes regarding pain management which supports my research finding as the mean score of the students on the KASRP-N scale was 13.48±3.60 and the rate of correct responses to the scale questions was evaluated as poor with 34.5%. In India, a study by Kaur (2017) aims to assess the knowledge and attitude of registered nurses regarding pain management at Kular Hospital, Bija (Punjab) was just opposite of my research study as the majority of the respondents (66%) had average knowledge and attitude related to pain management with a score of 15-20. 20% of respondents had poor knowledge and attitude related to pain management

with a score of 0-15, and only 14% of respondents had good knowledge and attitude related to pain management with a score of 20-25. It was also found that there is a significant relationship of knowledge with the attitude of registered nurses towards pain management.

CONCLUSION

The final semester nursing students had inadequate knowledge and attitudes towards pain management. The nursing school should revise the nursing curriculum to include courses that improve nursing students' knowledge and attitudes towards pain assessment and management. The Ministry of Health should also introduce continuing education programmes on pain assessment and management, paying particular attention to the different types of pain assessment tools and analgesic selection. This way, student nurses in clinical practice can learn from their hospital supervisors.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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