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Nurses knowledge and attitude toward pain management: Cross sectional, multi-center study from Palestine

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ABSTRACT

Background: Pain is one of the most common and debilitating experiences for patients in the hospital setting, leading to significant adverse effects on patients' physical, emotional, and psychological health. Although pain management has improved significantly worldwide, issues remain regarding assessment and treatment of pain. Nurses, as direct caregivers, play an important role in assessing and managing pain, and it is possible that their beliefs, knowledge, and barriers at the systems level can influence the effectiveness of pain management. The purpose of this study was to assess nurses' knowledge, attitudes, and barriers related to pain management practices in hospitals located in the northern West Bank, Palestine.

Methods: A descriptive cross-sectional study design was used to survey 199 registered nurses providing care in emergency, medical-surgical, and critical care settings. Nurses were surveyed using convenience sampling. A modified KASRP tool (33 items) was used to measure knowledge, attitudes, and barriers. Descriptive statistics, *t*-tests, and ANOVA were used to analyze the data.

Results: The overall mean score for knowledge and attitude was 44.75%, which reflects a low adherence to appropriate practice, or standards of practice regarding pain management. Postgraduate educational level of nurses in the study had a significant association with high scores compared to lower educational levels ($p = 0.016$). In addition, scores in knowledge and attention to income had a significant association ($p = 0.043$). There were notable areas of knowledge gap, including concerns about opioid addiction (29.1% correct), as well, as the lack of understanding about benzodiazepine efficacy (34.2% correct). The most frequently reported barriers included concerns about addiction (61.5%), lack of IV access (61.4%) and time (59.3%).

Conclusion: Nurses in the northern West Bank demonstrate considerable deficits in pain management knowledge and systems-related barriers. The need for educational initiatives, trauma informed and updated policies, and standard clinical guidelines for evidence-based pain management, is urgent. By improving nurses' competency, pain suffering may decrease and clinical outcomes improve.

1. Introduction & background

Pain is an everyday, troubling experience that engulfs most patients who are hospitalized, profoundly impacting physical, emotional, and spiritual health(Hsu et al., 2019; Reyala, 2020). Although global standards and guidelines advocate for suitable assessment and management of pain, studies demonstrate that persistent under-treatment of pain occurs in clinical practice. Even when pain was present, more than 50% of patients experienced either unrelieved or inadequately treated incidents of pain, despite therapeutic options available for use (Özduran et al., 2024; Saunders et al., 2023).

Nurses are positioned at the forefront of providing pain management. While nurses' attitudes, knowledge level, and system barriers may prevent optimal pain care, the literature suggests widespread myths about opioids, inadequate assessment practice, and systemic barriers, including staffing, workload, and availability of oral and parenteral opioid analgesics (Chisaki et al., 2025; Vagnoli et al., 2019).

While there have been multiple studies assessing nurses'

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competencies in pain management in the West and regionally, there has been limited research from the Arab world, especially Palestine (Krokmyrdal & Andenæs, 2015; Liu et al., 2021). The Palestinian health context has unique socio-cultural and systemic factors that may influence pain management.

This study aimed to assess nurses' knowledge, attitudes, and perceived barriers regarding pain management in hospitals in the northern West Bank, Palestine, and to examine demographic and professional factors associated with knowledge gaps, in order to inform targeted educational interventions and policy development.

2. Methods

2.1. Design and setting

A descriptive cross-sectional study was undertaken in governmental and university hospitals in the northern West Bank, in Palestine. Clinical settings included emergency, medical, surgical, and intensive care units.

2.2. Population & sampling

Participants were registered nurses who provided direct bedside care. Inclusion criteria were: (1) RN in Palestine, (2) clinical experience of at least 1 year, and (3) employed in one of the units selected for this study. Exclusion criteria were: interns, or any nurses that held administrative positions.

Convenience sampling was used. Raosoft generated a sample size of 300 respondents with a 95% confidence interval with a 5% margin of error, but adjusted for 10% attrition. Data returned included 199 eligible and valid responses (66% response rate). Reasons for attrition were incomplete forms or not answering all sections.

2.3. Study instruments

The American Pain Society, the World Health Organization, and the Agency for Health Care Policy and Research all set criteria for pain management that were reflected in the original Knowledge and Attitudes Survey Regarding Pain tool (KASRP). A demographic form, the modified NKASRP, and a questionnaire with informed consent were used to gather the data.

The first 22 items are true/false inquiries, and items 23 through 28 are multiple-choice inquiries; These include sections on pain assessment and pharmacological and non-pharmacological treatments (Willens, 2014).The study team was worried that potential volunteers might think the initial KASRP tool was too lengthy to complete during working hours. 22 true and false items and 11 multiple-choice questions from the KASRP instrument were chosen by the researchers to increase response rates. Although reliability testing (Cronbach's alpha) was not conducted for the modified tool in this study, the original KASRP demonstrates strong psychometric properties in prior research.

2.4. Data collection

Self-administered questionnaires were distributed in paper format during work shifts. Participation was voluntary, and no incentives were provided.

2.5. Data analysis

The Statistical Package for Sciences (SPSS) version 25 was used, Demographic variables were summarized using descriptive statistics. Knowledge scores were determined by taking the total number of correct answers divided by the number of items in total, multiplied by 100 (B Ferrell, 2014). A score of less than 50% corresponds to poor knowledge, a score between 50 and 75% corresponds to acceptable knowledge, and a score greater than 75% corresponds to good knowledge. Differences in knowledge scores associated with demographic data were evaluated using *t*-tests and ANOVAs and an $P < 0.05$ (Schnall et al., 2008).

2.6. Ethical consideration

Ethical approval was granted from the Institutional Review Board (ANNU Ref: Oct.2023/53) and the Palestinian Ministry of Health. Informed written consent was obtained, and all confidentiality and anonymity were maintained.

3. Results

This research included 199 nurses as research subjects. The average age of the nurses was 30.1 years old with an average of 4.89 years of experience; the youngest nurse was 23 years old and the oldest was 45 years old. The participants' years of employment varied from 1 to 20 years, with an overall mean of 7.1 years +0.87 months. As indicated in Table 1, just over half of the respondents were males, with 105 being male (52.8%); most ($n = 118$; 59.3%) of all participants were married. The majority of the participants in the study hold a bachelor degree in nursing (BSN), with 134 participants holding a BSN (67.3% of the total), 56, (32.5% of the total) holding an Associate's Degree in Nursing (ADN) and only 9 participants, (4.5% of the total) holding Postgraduate nursing qualifications. The majority of respondents live in cities ($n = 109$, 54.5%); the second highest number of participants was from the villages ($n = 65$, 32.5%); and the least common residence of the respondents was refugee camps ($n = 26$, 13.0%) The majority of respondents stated that they earn an average income of between 500 JD - 1000 JD per month and only 32 participants stated they earn less than 500 JD per month with only 2 participants reporting to earn greater than 2000 JD/m.

4. Knowledge and attitude regarding pain management

The mean score of knowledge and attitude for respondents ($n = 199$) who completed two sections was 44.75 out of 100 (14.77 out of 33) with a range score from 8 out of 33(24.4%) to 25 out of 33 (75.76%) (SD = 3.11) and it was statically significantly affected by Educational level and income ($p = 0.016$), ($p = 0.043$) respectively. The nurses with postgraduate certificates had higher levels of knowledge and attitude of pain management (mean = 16.88, SD = 4.34) and those who took form 5000 and 1000 JD had the highest level of knowledge and attitude

Table 1
Participant's demographic.

Demographics		N	%
Age	20–29	107	53.8
	30–39	77	38.7
	40–49	15	7.5
Gender	Male	105	52.8
	Female	94	47.2
Marital Status	Single	81	40.7
	Married	118	59.3
Workplace	MOH	71	35.7
	Others	128	64.3
Educational level	Associate degree	56	28.1
	BSN	134	67.3
	Postgraduate	9	4.5
Residence Place	City	109	54.5
	Village	65	32.5
	Refugee Camp	26	13.0
Income	Less than 500 JD	32	16.1
	500–1000 JD	152	76.4
	1000–2000	13	6.5
	More than 2000 JD	2	1.0
Year of experience	1–5	83	41.7
	6–10	78	39.2
	11–15	26	13.1
	16–20	12	6.0

JD: Jordan Dinner, BSN: Bachelor's degree in Nursing, MOH: Ministry of Health.

among all participants (mean = 15.53, SD = 2.25) (see Table 2).

Table 3 displays the results of the True/False item with a possible total score of 22, with each item receiving either a correct or incorrect answer. The mean score for this section was 10.30 (SD = 2.39) representing 45% of the total score. The majority of participants (73.9%) correctly идентифицировали the definition of equianalgesia, and the majority of respondents (78.9%) noted that it is essential to assess the level of sedation when3 administering opioids.

On the multiple-choice items, the mean score is 39.2% (4.3 out of 11). Respondents' scores on this section ranged from 1 to 9 (M = 4.3, SD = 1.75). The most common response to the question concerning the drug of choice for prolonged moderate to severe cancer pain (74.4%) and to the question about the appropriate route of administration for post-operative pain relief (72.4%) identified morphine as the most appropriate drug and identified the best route of administration for the drug. On the other hand, the lowest percentage of participants identified the recommended route for administration of opioids for persistent cancer pain (16.1%) and the lowest percentage of participants identified the manifestations of withdrawal from opioids (9.0%). (see Table 4).

5. Barriers to pain assessment and management

Table 5 illustrated that the most reported barriers to pain assessment and management were the presence of abuse or addiction to narcotics (mean 61.5%), lack of intravenous access (mean = 61.4%), and lack of time to do pain assessment mean 59.3%). However, the least mentioned barriers were patients hesitating to report pain (mean = 51.0%) and being responsible for providing care for other acute patients who had pain (mean = 52.4%).

6. Discussion

The results show that nurses consistently have poor attitudes and low levels of pain management knowledge, which is in line with local and global research. This implies that despite the availability of evidence-based clinical guidelines, there are still gaps in pain education. (Maribbay et al., 2023; Shoqirat et al., 2019; Sweity et al., 2022).

Table 2
The difference in the level of knowledge based on the participants' characteristics.

Demographics		Level of general knowledge	
		Mean (SD)	*P*-value
Age	20–29	15.00 (3.25)	0.077[a]
	30–39	14.76 (2.85)	
	40–49	13.06 (3.11)	
Gender	Male	14.89 (3.28)	0.331[b]
	Female	14.62 (2.92)	
Marital Status	Single	14.60 (3.06)	0.826[b]
	Married	14.88 (3.15)	
Workplace	MOH	14.16 (2.97)	0.861[b]
	Others	15.10 (3.15)	
Educational level	Associate degree	13.98 (2.54)	0.016[a]
	BSN	14.95 (3.16)	
	Postgraduate	16.88 (4.34)	
Residence Place	City	14.37 (2.93)	0.109[a]
	Village	15.40 (3.25)	
	Refugee Camp	14.84 (3.34)	
Income	Less than 500 JD	13.37 (2.61)	0.043[a]
	500–1000 JD	15.00 (3.21)	
	1000–2000	15.53 (2.25)	
	More than 2000 JD	14.50 (3.53)	
Year of experience	1–5	14.96 (3.39)	0.202[a]
	6–10	14.84 (3.03)	
	11–15	14.76 (2.42)	
	16–20	12.91 (2.60)	

The significant level at P < 0.05.
[a] *P* value derived from *t*-test.
[b] P value derived from ANOVA *t*-test.

Table 3
True/false questions.

True False questions		True		False		SD
		n	%	n	%	
1	Vital signs are reliable indicators of pain	152	76.4	47	23.6	0.43
2	Children under 2 years of age have decreased pain sensitivity and limited memory of painful experience	135	67.8	64	32.2	0.47
3	Distraction decreases pain severity	121	60.8	78	39.2	0.49
4	The patient may sleep despite severe pain	114	57.3	85	42.7	0.50
5	Aspirin and other nonsteroidal anti-inflammatory agents are not effective analgesics for painful bone metastases.	133	66.8	66	33.2	0.47
6	Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months	118	59.3	81	40.7	0.49
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	125	62.8	74	37.2	0.48
8	The usual duration of analgesia of 1–2 mg morphine IV is 4–5 h	124	62.3	75	37.7	0.49
9	Opioids should not be used in patients with a history of substance abuse	130	65.3	69	34.7	0.48
10	Elderly patients cannot tolerate opioids for pain relief.	118	59.3	81	40.7	0.49
11	patients should be encouraged to endure as much pain as possible before using an opioid	131	65.8	68	34.2	0.48
12	children less than 11 years old cannot reliably report pain so clinicians should rely solely on the parent's assessment of the children's pain intensity	113	56.8	86	43.2	0.50
13	Patients' spiritual beliefs may lead them to think pain and suffering are necessary	140	70.4	59	29.6	0.46
14	Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real	111	55.8	88	44.2	0.50
15	Vicodin - Paracod (hydrocodone 5 mg + acetaminophen 300 mg) po is approximately equal to 5–10 mg of morphine po	75	37.7	124	62.3	0.49
16	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	139	69.8	60	30.2	0.46
17	Anticonvulsant drugs such as gabapentin (Neurontin) produce optimal pain relief after a single dose	75	37.7	124	62.3	0.49
18	Benzodiazepines- Forexan are not effective pain relievers and are rarely recommended as part of an analgesic regiment	68	34.2	131	65.8	0.48
19	Narcotic/Opioid addiction is defined as a chronic neurobiological 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	58	29.1	141	70.9	0.46
20	the term (equianalgesic)means approximately equal analgesia and	147	73.9	52	26.1	0.44

(continued on next page)

Table 3 (*continued*)

	True False questions	True		False		SD
		n	%	n	%	
	is used when referring to the doses of various analgesics that provide approximately the same amount of pain relief					
21	Sedation assessment is recommended during Opioid pain management because excessive sedation precedes opioid-induced respiratory depression	157	78.9	42	21.1	0.41
22	After an initial dose of opioid analgesic is given, subsequent doses should be adjusted by individual patients' responses.	142	71.4	57	28.6	0.45

N = 199, SD: Standard Deviation.

Table 4
Multiple choice question.

#	Multiple choices	True Answer	
		N	%
1	The recommended route of administration of opioid analgesics eg. Morphine for patients with persistent cancer-related pain is	32	16.1
2	The recommended route administration of opioid analgesics eg. Morphine for patients with brief, severe pain of sudden onset such as trauma or postoperative pain is	144	72.4
3	Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for cancer patients?	148	74.4
4	Analgesics for postoperative pain should initially be given	80	40.2
5	The most likely reason a patient with pain would request increased doses of pain medication is	58	29.1
6	Which of the following is useful for the treatment of cancer pain?	50	25.1
7	The most accurate judge of the intensity of the patient's pain is	82	41.2
8	The time to peak effect for morphine given IV is	90	45.2
9	The time-to-peak effect of morphine given orally is	115	57.8
10	Following the abrupt discontinuation of an opioid, physical dependence is manifested by the following	18	9.0
11	Which statement is true regarding opioid-induced respiratory depression?	40	20.1

Table 5
Barriers to pain assessment and management.

#	Barriers	Mean
1	The responsibility of caring for other acutely ill patients in addition to a patient with pain	52.4
2	Patients' reluctance to report pain	51.0
3	Patients' reluctance to take opioids	52.6
4	Nursing staff reluctance to give opioids	55.0
5	Inadequate assessment of pain and pain relief	56.2
6	Inadequate staff knowledge of pain management principles	56.6
7	Lack of time to adequately assess and control pain	59.3
8	The inability to medicate until a diagnosis is made	58.4
9	The inability to determine an adequate history/allergy	57.6
10	Lack of intravenous access	61.4
11	Inability to monitor for side effects when patients leave	59.2
12	The department for diagnostic procedures	55.0
13	Lack of access to a wide range of analgesics	58.2
14	Time to find narcotic keys	57.0
15	The presence of drug and substance addiction and or abuse	61.5

The strong correlation between income level and knowledge scores could be a reflection of more widespread structural injustices, such as unequal access to opportunities for professional growth, institutional support, and continuing education (Samarkandi, 2018).

Higher-paid nurses might work in environments with better resources or be more involved in training programs, which could improve their clinical expertise and self-assurance in pain management techniques.Effective pain assessment and management are further hampered by systemic limitations like a heavy workload, stringent opioid administration regulations, and restricted intravenous access(Al-Sayaghi et al., 2022; Maribbay et al., 2023; Sweity et al., 2022).

These findings highlight the need for organizational and policy-level interventions in addition to individual-focused educational strategies.

7. Strength, limitations, and recommendation

It is recommended that Healthcare Systems develop and maintain structured continuing education programs for Nurses that focus on pain assessment, opioid pharmacology and evidence based pain management techniques. In addition, Policymakers and Health Facility Administrators should review their current policies with respect to opioids to ensure access without compromising Patient Safety, to allocate time and resources for Nurses to be provided Protected Time and Resources to allow Nurses in the Field to have access to Training Programs that will hopefully decrease the disparities in income related to Professional Development.

The limitations of this study include Convenience Sampling and the sample size that was attained, which limits generalizability. Self-reported data collection creates opportunities for response bias. Although strong psychometric properties exist for the original KASRP, reliability testing was not completed for the modified version used in this study, which may impact the reliability when interpreting results and comparisons. These limitations should be taken into consideration while interpreting or applying the findings to the Field.

Future Research should include a longitudinal design to identify changes in Competency in Nurses' Ability to Manage Pain over time and include qualitative designs to fully explore Organizational and Contextual Factors that influence Practice. Additionally, Interventional Studies should be conducted to determine the effectiveness of Targeted Education Programs.

8. Conclusion

Nurses in the northern West Bank had substantial deficits in knowledge and attitudes regarding pain management, compounded to some degree by education and system-level factors. Intentional educational interventions and policy changes to improve clinical systems are needed, in order to change practice in pain management. Further studies looking at interventional approaches to evaluate change over time is warranted.

List of abbreviations

KAUH	King Abdullah University Hospital
KASRP	Knowledge and Attitudes Survey; Regarding Pain tool
SPSS	The Statistical Package for Sciences
JD	Jordan Dinner
BSN	Bachelor degree in Nursing
MOH	Ministry of Health

CRediT authorship contribution statement

R. Zaitoun: Formal analysis, Conceptualization. **I. Sakleh:** Methodology, Investigation, Conceptualization. **M. Saryeh:** Writing – review & editing. **M. Hazam:** Data curation. **A. Zidan:** Conceptualization. **N. Hamamreh:** Project administration. **W. Zandeeq:** Data curation. **M. Hayek:** Writing – review & editing.

Consent for publication

Not applicable / Written consent for publication was obtained from participants where relevant.

Ethics approval and consent to participate

This study was approved by the Institutional Review Board (ANNU Ref: Oct.2023/53) and the Palestinian Ministry of Health. and written informed consent was obtained from all participants prior to data collection. All procedures were conducted in accordance with the ethical standards of the institution and with the 1964 Helsinki Declaration and its later amendments.

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Declaration of competing interest

There is no conflict of intrest

Data availability

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

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