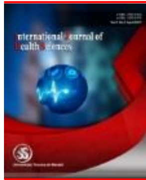

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Assess the competency of staff nurses regarding pain assessment and monitoring in critically ill patients

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***Abstract*---**Background and aim of the work: Pain is defined as an unpleasant emotional and sensory experience that is connected to or characterized by tissue damage, either real or potential. It is a reaction to hurt, disease, or other negative stimuli that is both bodily and emotional. Pain acts as a defense mechanism to notify the body of damage or possible danger. According to the International Association for the Study of Pain (IASP), pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. Method: A study to assess the competency of staff nurses regarding pain assessment and monitoring in critically ill patients at selected hospital, Gurugram, Haryana.conductedon100 staff nurses of intensive care unit, Level of knowledge about pain were measured by pain assessment knowledge questionnaire, clinical competency observation checklist, pain assessment and monitoring attitude scales. Result: The study findings reveals that the level of knowledge of the staff Nurses regarding pain assessment and monitoring of patient shows majority 48 (48%) had poor knowledge and those who had adequate knowledge 30(30%)

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Good knowledge was present among 22 (22%) of the samples. Out of 100 nurses 36% nurses were non-competent, 34% were average and 30% were Competent. The study reveals that there was significant association of knowledge with socio demographic Variables like Age, Educational Qualification & Marital Status were found statistically associated with level of knowledge about pain monitoring & Assessment. Conclusion: -The study was conducted to evaluate how well staff nurses understand and perform pain assessment and monitoring in critically ill patients at a selected hospital in Gurugram, Haryana. The results showed that many nurses had limited knowledge, with 48% having poor knowledge and only 22% showing good understanding. In terms of skills, 30% of nurses were competent, while the rest showed average or low levels of competency. The study also found that factors like age, education, and marital status were linked to how much the nurses knew about pain assessment. These findings highlight the need for regular training and educational programs to improve nurses' knowledge and skills in managing pain, which is essential for providing better care to critically ill patients.

***Keywords*---**Nurses, Pain, Monitoring, Knowledge, Assessment.

Introduction

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage. It is a protective response to harmful stimuli and involves both physical sensations and emotional reactions. According to the International Association for the Study of Pain (IASP), pain encompasses not just sensory input but also emotional and psychological responses, making it a complex, multidimensional experience.[1] Pain is classified based on origin, duration, and underlying mechanisms. By origin, somatic pain arises from skin, muscles, or bones and is usually sharp and localized, while visceral pain comes from internal organs and is dull, deep, and poorly localized. Neuropathic pain results from nerve damage and is described as burning, shooting, or electric-like. Based on duration, acute pain is short-term and linked to a specific cause, resolving as the condition heals, whereas chronic pain persists beyond three to six months and may exist without a clear source. Mechanistically, nociceptive pain arises from tissue injury, neuropathic pain from nerve dysfunction, and mixed pain involves features of both.[3] Common causes of pain include trauma, inflammation, infection, nerve damage, and cancer. Pain perception is influenced by physiological factors (e.g., nerve sensitivity), psychological states (e.g., anxiety, depression), cultural beliefs, age, gender, and chronic health conditions. Pain assessment is critical for effective management. Tools like the Numerical Rating Scale (NRS), Visual Analog Scale (VAS), and Faces Pain Scale (FPS) assess pain intensity and impact. In critically ill or nonverbal patients, specialized tools such as the Critical-Care Pain Observation Tool (CPOT), Behavioural Pain Scale (BPS), FLACC Scale, and NOPAIN scale are used to observe behavioural and physiological cues, especially when verbal communication is limited.[2] Management of pain includes pharmacological approaches like non-opioid analgesics (e.g., NSAIDs, acetaminophen), opioids for severe pain, and adjuvant

drugs (e.g., antidepressants, anticonvulsants). Topical agents such as lidocaine and capsaicin are used for localized pain. Non-pharmacological methods—including physical therapy, massage, and thermal therapy enhance pain relief and improve quality of life when combined with medications.[4]

Method

This research employed a quantitative non-experimental descriptive research design to assess the competency of staff nurses regarding pain assessment and monitoring in critically ill patients. The study was conducted in a selected multispecialty hospital in Gurugram, Haryana, which has over 1,500 beds and offers advanced critical care services through its intensive care units. A total of 100 staff nurses working in the intensive care units were selected using a non-probability convenience sampling technique.[5]Participants were chosen based on predefined eligibility criteria. The inclusion criteria required that participants be registered staff nurses, willing to participate, and available during the data collection period. Staff nurses were excluded if they were on leave, unwell, or unwilling to participate at the time of data collection.[6]

Data collection

A structured data collection tool was developed to assess staff nurses' competency in pain assessment and monitoring of critically ill patients, based on a thorough literature review to ensure content validity. The tool comprised three sections: Section A collected socio-demographic data; Section B included a self-structured knowledge questionnaire with multiple-choice items; and Section C featured a modified Likert scale to assess attitudes toward pain assessment. Each correct knowledge response was scored, with total scores categorized into competency levels. The tool was validated by seven experts three nursing faculty and four critical care physicians who evaluated its relevance, clarity, and completeness. Reliability testing showed strong internal consistency (KR-20 = 0.89). A pilot study was conducted at SGT Hospital, Gurugram, with 10 nurses to confirm feasibility. Data collection took place over one month in selected hospitals in Gurugram. Ethical clearance was obtained, informed consent was secured, and participants' confidentiality and right to withdraw at any time were ensured throughout the study.

Data Analysis

Data analysis incorporated both descriptive and inferential statistical methods to evaluate the findings in alignment with study objectives. Descriptive statistics—including means, standard deviations, frequencies, and percentage distributions—were used to summarize socio-demographic characteristics, knowledge levels, and competency scores of staff nurses. Inferential statistics included the Chi-square test and ANOVA to examine associations between nurses' knowledge and selected socio-demographic variables such as age, marital status, and educational qualification. These variables were found to be significantly associated with knowledge levels ($p < 0.05$). Variables like gender, work experience, department, employment status, and prior training showed no significant association. The statistical analysis was performed using SPSS

software, and the significance level was set at $p \leq 0.05$. This analytical approach provided reliable insights into the existing knowledge gaps and competency levels among staff nurses regarding pain assessment and monitoring in critically ill patients.

Results

A total of 100 ICU staff nurses participated in the study. Analysis of socio-demographic data revealed that the majority (29%) were aged 18–25 years, with females comprising 80% of the sample. Most participants were single (40%) and held either a B.Sc. (39%) or Post B.Sc. (37%) in Nursing. Regarding professional experience, 40% had 1–3 years of ICU experience, and 45% were working in intensive care units. Most were employed full-time (85%), and 63% had received formal training in pain assessment and monitoring. Assessment of knowledge levels revealed that 48% of the nurses had poor knowledge, 30% had average knowledge, and only 22% demonstrated good knowledge regarding pain monitoring and assessment in critically ill patients. In terms of competency, 36% of the nurses were non-competent, 34% showed average competency, and 30% were considered competent. Chi-square analysis demonstrated statistically significant associations between knowledge levels and selected demographic variables, including age (p=0.05), marital status (p=0.05), and educational qualification (p=0.02). However, other variables such as gender, experience, current department, employment status, and prior training did not show significant relationships with knowledge or competency levels (p>0.05). These findings highlight a substantial gap in knowledge and competency among ICU nurses in pain assessment and monitoring. The results underscore the need for targeted educational interventions and structured training programs to enhance clinical competencies and improve patient care outcomes.

Table-1: Frequency and Percentage Distribution of Samples Acc. to Socio-Demographic Variables

Sr.No.	Demographic Variables		Frequency	Percentage
1.	Age	18-25	29	29
		26-35	28	28
		36-45	13	13
		46-55	10	10
		56-65	10	10
		66 and above	10	10
2.	Gender	Male	20	20
		Female	80	80
3.	Marital Status	Single	40	40
		Married	35	35
		Divorced	15	15
		Widowed	5	5
		Preferred No to Say	5	5
4.	Educational Qualification	B.Sc. Nursing	39	39
		Post B.Sc.	37	37

Sr.No.	Demographic Variables		Frequency	Percentage
		Nursing		
		GNM	24	24
		ANM	0	0
		Other (Specify)	0	0
5.	Year of Experience in critical care Nursing	<1 year	20	20
		1-3 years	40	40
		4-6 years	15	15
		>6 years	25	25
6.	Current Department ICU ward	Emergency Department	25	25
		Intensive care unit	45	45
		Surgical Ward	15	15
		Medical Ward	15	15
		Other	0	0
7.	Employment status	Full Time	85	85
		Part Time	15	15
		Contract based	0	0
8.	Have you received formal training in pain assessment and monitoring	Yes	63	63
		No	37	37

Table 1 summarizes the socio-demographic profile of ICU staff nurses. Most participants (29%) were aged 18–25 years, and the majority were female (80%). Regarding marital status, 40% were single and 35% married. Educationally, 39% held a B.Sc. Nursing degree, followed by 37% with Post Basic B.Sc., and 24% with GNM. About 40% had 1–3 years of critical care experience, and 45% worked in ICUs. Most were employed full-time (85%), and 63% had received formal training in pain assessment and monitoring.

Table – 2: Frequency and Percentage Distribution of Samples Acc. to Level of Knowledge in monitoring and assessing pain in critical ill patient

N=100

S. No	Level of Knowledge	Frequency	Percentage
1	Poor Knowledge	48	48.0
2	Average Knowledge	30	30.0
3	Good Knowledge	22	22.0

Table 2 shows the frequency and Percentage distribution of samples acc. to level of knowledge in monitoring and assessing pain in critical ill patient. The level of knowledge of the samples regarding level of knowledge in monitoring and assessing pain in critically ill patient shows Majority 48 (48.0 %) had poor knowledge and those who had adequate knowledge were 30 (30.0 %). Good knowledge was present among 22 (22.0 %) of the samples.

Table – 3: Frequency and Percentage Distribution of Samples Acc. to Competency with pain assessment instruments & Scale

(N=100)

S. No	Level of Competence	Frequency	Percentage
1	Non-Competent	36	36.0
2	Average	34	34.0
3	Competent	30	30.0

Table 3 The results indicate that competency levels in using pain assessment instruments and scales varied among participants. A majority (36%) were classified as non-competent, followed by 34% who demonstrated average competency. Only 30% of the staff nurses were found to be fully competent. These findings underscore a significant gap in clinical proficiency, suggesting the need for targeted educational interventions to enhance competency in pain assessment and monitoring. Structured training programs could play a vital role in bridging this gap and improving the quality of pain management in critical care settings.

Table – IV: Frequency and Percentage Distribution of Samples Acc. to association between staff nurse knowledge and socio demographic variables

N=100

S. No	**Socio-Demographic Variable**	**Level of Knowledge**				**Chi^2 value**	**P-value**
			Poor	**Average**	**Good**	9.34	**0.05***
1	**AGE**	18-25years	18	10	1		
			61.2%	38.0%	0.8%	(df=4)	
		26-35 years	10	16	2		
			39.6%	56.2%	4.2%		
		36-45years	3	7	3		
			43.5%	52.2%	4.3%		
		46-55 years	4	4	2		
			8.6%	8.6%	4.3%		
		56-65 years	0	10	0		
			0%	100%	0%		
		66 & above	10	0	0		
			100%	0%	0%		
2	**GENDER**	Male	11	8	1	2.12	0.71NS
			54.0%	43.9%	2.0%	(df=4)	
		Female	0	80	0		
			0.0%	100.0%	0.0%		
3	**MARITAL STATUS**	Single	25	13	2	12.32	**0.05***
			64.3%	33.9%	1.8%	(df=6)	
		Married	14	20	1		
			38.2%	60.0%	1.8%		
			7	7	0		
		Divorced	50.0%	50.0%	0.0%		
			2	3	1		
		Widowed	43.5%	52.2%	4.3%		
		Preferred	0	5	0		

		No to say	0%	100%	0%		
4	**EDUCATIONAL QUALIFICATION**		26	13	0	14.19 (df=6)	0.02*
		B.Sc Nursing	69.2%	30.8%	0.0%		
		PB B.Sc Nursing	27	10	0		
			70.8%	29.2%	0.0%		
		GNM	15	8	1		
			55.7%	42.6%	1.6%		
		ANM	0	0	0		
			0%	0%	0%		
5	**YEAR OF EXPERIENCE IN CRITICAL CARE NURSING**	<1 year	20	6	2	0.29 (df=2)	0.86NS
			54.0%	43.9%	2.1%		
		1-3 years	40	0	0		
			100%	0%	0%		
		4-6 years	0	15	0		
			0%	100%	0%		
		More Than 6 years	25	0	0		
			10%0	0%	0%		
6	**CURRENT DEPARTMENT**	Emergency	15	10	0	2.42 (df=4)	0.65NS
			64.0%	36.0%	0.0%		
		Intensive care Unit	35	15	3		
			52.3%	45.4%	2.3%		
		Surgical Ward	0	15	0		
			0%	100%	0%		
		Medical ward	15	0	0		
			100%	0%	0%		
		Other	0	0	0		
			0%	0%	0%		
7	**EMPLOYMENT STATUS**		70	15	0	6.74 (df=6)	0.34NS
		Full Time	75.0%	25.0%	0.0%		
			13	7	0		
		Part Time	65.5%	34.5%	0.0%		
8	**HAVE YOU RECEIVED TRAINING IN PAIN ASSESSMENT AND MONITORING**	Yes	63	0	0	4.29 (df=4)	0.36NS
			100%	0.0%	0.0%		
		No	37	0	0		
			100%	0.0%	0.0%		

Tables 4 The table presents the association between staff nurses' knowledge levels regarding pain assessment and various socio-demographic variables, analyzed using the Chi-square test. A statistically significant association was observed between knowledge level and variables such as age (x^2 = 9.34, p = 0.05), marital status (x^2 = 12.32, p = 0.05), and educational qualification (x^2 = 14.19, p = 0.02). These findings suggest that these factors may influence nurses' understanding and awareness of pain assessment practices. In contrast, gender (p = 0.71), years of experience in critical care nursing (p = 0.86), current

department (*p* = 0.65), employment status (*p* = 0.34), and formal training in pain assessment (*p* = 0.36) showed no significant association with knowledge levels. This indicates that while some demographic variables impact baseline knowledge, others do not significantly affect nurses' understanding of pain monitoring and assessment in critically ill patients.

Discussion

The present study, conducted among staff nurses at a selected hospital in Gurugram, Haryana, explored their competency in pain assessment and monitoring of critically ill patients. The analysis of demographic characteristics revealed that the majority of participants were aged between 18–25 years (29%), followed by equal proportions (10%) in the age groups of 46–55, 56–65, and 66 & above. Most participants were female (80%), single (40%), and had completed B.Sc. Nursing (39%). The majority (40%) had 1–3 years of clinical experience, and 45% were working in the intensive care unit. Most staff nurses (85%) were employed full-time, and 63% had received prior training in pain assessment.

These findings are supported by Kumari Sandhya and Dillu Rebecca (2017), who conducted a descriptive survey among nurses in the Delhi NCR region and found that a significant portion (84%) had average knowledge and 16% had poor knowledge regarding pain assessment among cancer patients. Similarly, our study found that 48% of staff nurses had poor knowledge, 30% had average knowledge, and only 22% demonstrated good knowledge. This consistent trend highlights the need for improved training and awareness programs in clinical pain monitoring practices.

In assessing nurses' competence with pain assessment instruments and scales, 36% of participants were found to be non-competent, 34% showed average competency, and only 30% were competent. This aligns with findings by R.K. Sharda et al. (2022), who reported that among nurses working with cancer patients in Pune, 45% had good knowledge, 6% had average knowledge, and 49% had excellent knowledge. Although their study revealed a more favourable competency distribution, both studies affirm variability in nurses' practical application of pain monitoring tools.

The study also identified significant associations between knowledge scores and specific socio-demographic variables. Age, marital status, and educational qualification were found to be statistically significant factors affecting knowledge levels ($p < 0.05$). These findings are consistent with the research conducted by M. Athira Perez-Cañaveras (2019), who examined knowledge of pain assessment in chemotherapy patients and reported significant associations between knowledge and variables such as age, qualification, years of experience, and prior training. These results underscore the pressing need to enhance the training infrastructure and competency development of nurses, particularly in the domains of critical care and pain assessment. Structured programs, simulations, and targeted educational interventions may be key in closing these gaps and improving patient care outcomes in high-dependency environments.

Conclusion

The study findings indicated that staff nurses demonstrated limited knowledge and competence in pain assessment and monitoring of critically ill patients. Specifically, 48% of participants exhibited poor knowledge, while only 22% had good knowledge. Regarding practical competency, 36% were non-competent, 34% had average competence, and only 30% were found competent. Furthermore, certain demographic variables such as age, marital status, and educational qualification showed significant associations with knowledge levels ($p < 0.05$), whereas others did not. These results suggest that while overall knowledge and competency remain low, specific demographic factors may influence nurses' baseline understanding and ability in pain monitoring and assessment.

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