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Nurses' perceived barriers to and facilitators of pain assessment and management in critical care patients: a systematic review

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ABSTRACT

Background: Pain is a prevalent issue among critically sick cases, with inadequate management of pain documented even though the implementation of pharmaceutical and/or nonpharmacological treatments. Research has demonstrated that the knowledge and attitudes of intensive care unit (ICU) nurses might affect pain evaluation and treatment. Furthermore, obstacles to evaluating and managing pain in the intensive care units, categorized as nurse-related, physician-related, system-related, or patient-related, can influence intensive care unit nurses' conduct regarding pain evaluation and treatment.

Aim and objective: This investigation aims to evaluate the practices of critical care nurses regarding evaluation and dealingwithpain, as well as to investigate the perceived barriers and facilitators associated with evaluating pain in critically sick cases.

Patients and methods: A systematic review of literature concerning pain evaluation and treatment in critical care patients has been conducted across four databases, adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) criteria.

Conclusion: Inadequate knowledge of dealing with pain and inappropriate attitudes have been identified among nurses due to multiple obstacles and challenges. Regular pain evaluations and therapeutic education courses must be conducted for all nurses in Al-Qassim, Saudi Arabia, particularly for nurses working in intensive care units.

Keywords: critical care nurses, pain assessment, barriers, facilitators.

INTRODUCTION

Pain is a significant global health issue that demands serious attention. It is estimated that one in five adults suffer from pain, with an additional 1 in 10 adults experiencing chronic pain annually. Pain often becomes a primary reason for seeking medical assistance, especially in the intensive care unit (ICU) setting.**(1).**

Pain diminishes persons' QOL and greatly damages their physical and mental health. Consequently, cases in the intensive care unit need detailed pain evaluation & therapy. Nonetheless, many barriers hinder the effectualassessment and dealingwith pain in those in intensive care units.4 For example, while pain is a profoundly subjective experience, the diminished state of consciousness and intubation of cases in ICU restrict their capacity to communicate, hence complicating the evaluation and treatment of pain **(2).**

Critically ill patients commonly encounter pain, yet during life-threatening circumstances, pain and its management can be overlooked or underestimated by healthcare providers. Proper pain relief and effective patient care necessitate comprehensive pain assessment, which remains a prominent goal in healthcare **(3).**

A successful pain assessment requires a sound comprehension of pain by healthcare providers, as inadequate evaluation and documentation contribute to the prevalence of acute pain among patients. This could lead to an ongoing challenge within healthcare systems. **(4).**

Notably, nurses play annecessary role in enhancing managing of pain quality, catering to patients' needs. Given their constant presence with patients, nurses are responsible for pain assessment and management, employing diverse approaches including pharmacological interventions like analgesics or sedatives, as well as non-pharmacological methods such as massage and cold compress application **(5).**

There are several sources of pain in emergency units such as the cause of admission, medical procedures, invasive devices such as endotracheal tubes, nursing care, and sleep deprivation can worsen the experience of pain **(6).**

Although there are many contributing factors to the delay in analgesic delivery and inadequate pain management, it is crucial to consider the nurses' viewpoint. The nurse who conducts emergencies is the first

caring individual to react with the pain reports at the emergency department, who also initiates the evaluation and treatment **(7).**

Understanding and identifying obstacles can aid in promoting the development of pain-reduction techniques that improve emergency patients' medical treatment and outcomes. Poor knowledge and abilities, as well as excessive nursing workloads, are obstacles to providing adequate pain management and evaluation in many Eds **(8).**

The American Society for Pain Management Nursing advises utilizing behaviors of pain-related to assess & deal with pain in intubated cases or those with communication impairments.4 Multiple nonverbal scales, including the Behavioral Pain Scale (BPS) and the Critical-Care Pain Observation Tool (CPOT), have been confirmed as effective instruments for pain evaluation in adult critically sick cases. Nevertheless, the low sensitivity and specificity of these tools for pain indicators, especially in nonverbal cases, and the underestimation , misinterpretation, and misunderstanding ofbehaviors of pain by nurses, in addition to their poor awareness& attitudes regarding the utilization of such tools, have restricted their effectiveness. **(9), (10)**

Hence, the main objective of this systematicreview was to assess the practices of critical care nurses in pain management and evaluation and to explore the perceived barriers & enablers related to pain evaluation in critically sickcases.

MATERIALS AND METHODS

Search strategy

Two investigators conducted an electronic search to find all published qualitative and quantitative publications addressing nurses' perceived barriers to & facilitators of evaluating and controlling pain in adult critical care cases. Papers involved have been discovered by searches of the EBSCO, CINAHL, PsycINFO, MEDLINE, PubMed, and EMBASE databases. The subsequent keywords utilized include: “critical care nurses”, nurse”, “critically sickcases”, “pain”, “mechanically ventilated cases”, “adult”, “ICU”, “critical care unit”, “attitude”, “knowledge”, “pain management”, “pain assessment”, “facilitators”, “enablers”, “barriers”, & “challenges”.

Inclusion Criteria

This systematic review involved (1) peer-reviewed qualitative or quantitative investigations without restrictions on research design, (2) publications in English from the past decade, (3) research involving critical care nurses, and (4) literature specifically reflecting nurses' perspectives. and (5) concerning the obstacles & facilitators of effective pain evaluation & treatment in adult critical care cases.

Exclusion Criteria

This systematic review omitted investigations that were (1) dissertations, (2) book chapters, (3) focused on populations other than nurses, (4) carried out in clinical settings outside of adult critical care units, or (5) written in languages other than English.

Data extraction

The subsequent information had been extracted: the first author's name and publication year, location of research, number of patients, design of the study, inclusion criteria, research conclusions, and primary outcomes. The investigators of the present review carefully researched and analyzed the chosen research& compared their discoveries to achieve consensus and eliminate irregularities.

RESULTS

During our initial examination of databases, we discovered 412 research. Upon the elimination of duplicate studies, 202 studies proceed to further assessment. The assessments procedure included titles and abstracts, resulting in the identification of fifty papers with potential relevance. Subsequently, thirty-five research underwent comprehensive full-text evaluation, and fourteen investigations satisfied our stated inclusion criteria. The PRISMA flowchart in Figure 1 illustrates the representation of this selection process.

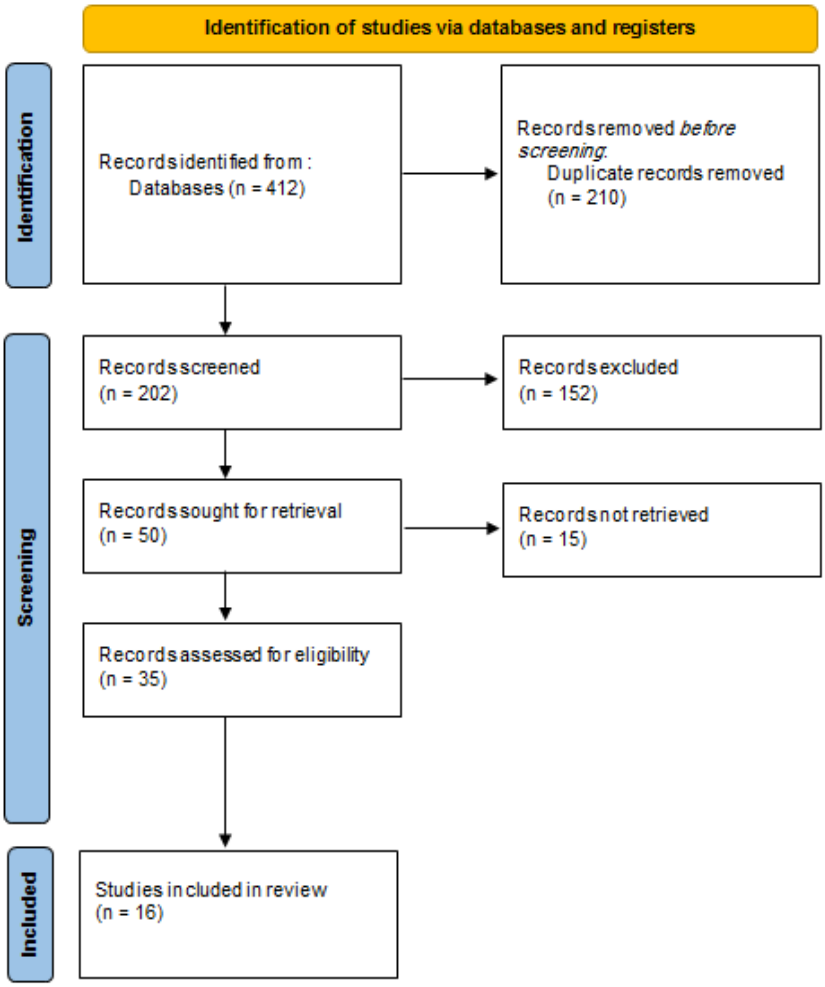

Figure 1: The PRISMA flowchart

Characteristics of the included studies

The meta-analysis involved sixteen investigations. Table 1 presents the baseline overview and characteristics of the involved studies.

Study No.	Study ID	Site	Study design	Sample Size
1	**Gerber et al., (11)**	Western switzerland	Descriptive observational	7
2	**Kizza et al., (12)**	Ugandan	Descriptive cross sectional	170
3	**Lewis et al., (13)**	USA	Quasi-experimental	32
4	**Rose et al., (14)**	Canada	Prospective cross sectional	842
5	**Roos-Blomet al., (15)**	Netherland	Unadjusted and case-mix adjusted	13
6	**Khalil et al., (16)**	Jordan	Descriptive cross sectional	417
7	**Asman et al., (17)**	Israel	Prospective cross sectional	187
8	**Wang et al., (18)**	Tiwan	Prospective cross sectional	370
9	**Hamdan et al., (19)**	Jordan	Descriptive cross sectional	300
10	**Lindberg et al., (20)**	Swedan	Qualitative	6
11	**Machira et al., (21)**	Kenya	Pre/post test Quasi-experimental	27
12	**Schreiber et al., (22)**	USA	Pre/post test Quasi-experimental	341

13	**Subramanian et al., (23)**	UK	Qualitative prospective exploratory	21
14	**Topolovec vranic et al., (24)**	Canada	Prospective cross sectional	140
15	**Alnjar et al., (25)**	United Ara**b** Emirates	Descriptive cross sectional	171
16	**Deldar et al., (26)**	Iran	Qualitative	20

Risk of bias assessment
The studies chosen exhibited strengths like a significant sample size, multicenter analysis demonstrated by **Roos-Blom et al. (15)**, & the samples were recruitment of from various units. Most of the involved cohorts demonstrated adequate quality for sample size and evaluation frequency.

Outcomes: The facilitators and barriers were classified into 4 groups:
1. patient-related
2. nurse-related
3. system-related
4. physician-related

Nurse-Related Barriers
Fifteen of the research chosen indicated a lack of knowledge between nurses concerning pain management in critically sick cases, which limits appropriate analgesia and is regarded as a barrier. Also, eight studies reported poor knowledge regarding pan assessment and some studies reported poor knowledge regarding pain management. Nurses believed that these cases had no pain. Furthermore, it serves as a barrier to efficient pain alleviation. Eight investigations indicated that nurses exhibited a deficiency in knowledge of cases' pain assessments, which restricted their ability to provide analgesics.

Nurse-Related Facilitators
The most used facilitators of managing pain in critically sick adult cases were:
1. Enhanced comprehension and analysis of pain behaviors.
2. adequate knowledge of pharmaceutical therapies.
3. Continuous professional development and education related to pain evaluation and treatment.

Patient-related facilitators of pain evaluation and controlling
The gold standard for pain evaluation is the patient's self-report of pain. Consequently, three research on Patient-Related Barriers and Facilitators indicated that patients' self-reported pain is the most precise indicator of pain & a facilitator for efficient treatment of pain. Only 8 of the examined investigations addressed these barriers from the perspective of critical care nurses. The most common stated was cases' failure to communicate, which was succeeded by hemodynamic instability.
Furthermore, it has been determined that a case's history of abuse substance, alcoholism, substance abuse, or suicide attempts obstructed effective pain treatment.
The predominant behavioral indications of pain described were motor activity (such as involuntary motions) & facial activity (such as grimacing).

Physician-Related Barriers and Facilitators
Only eight of the examined studies discussed physician-related barriers & enhancers of pain treatment. The predominant difficulties noted was that "physicians' prescription of analgesics is not dependent upon the assessment of pain scores." The absence of experience among junior physicians & the heavy workloads of senior physicians were identified as significant barriers to the efficient assessment and controlled pain. The primary facilitator of evaluating and controlling pain in critically sick adult cases was the collaboration among physicians & nurses, followed by the prescription of suitable analgesic doses by physicians.

System/Organization-Related Barriers
The most mentioned barriers were the absence of standardized pain measurement forms & devices for both critically sick verbal cases and non-verbal patients. Excessive workloads for nurses and elevated nurse-case ratios are regarded as significant barriers to effective pain management. substandard hospital environments, characterized by shared rooms separated only by curtains separating patients.
Inadequate education and training regarding evaluation of pain and management, as well as ineffective, nontherapeutic, or complex discussions regarding pain management throughout medical rounds.

DISCUSSION

Discomfort is one of the most distressing memories for critically sick people. Over eighty percent of surgical and medical cases admitted to the ICU have significant pain. Despite management of pain being a fundamental responsibility of nurses in intensive care units, their perceptions and attitudes toward this duty have not been earnestly examined **(27)**.

The evaluation and management of pain require several therapeutic approaches for effective pain control with minimal adverse effects. The initial stage in good pain management is the interaction among nurses & cases to evaluate the cases' pain. Up to sixty percent of cases presenting to emergency rooms have acute pain. The predominant cause of inadequate pain management is improper pain evaluation. **(28)**.

The essence of the critical care nursing role is direct patient management. The specific functions and responsibilities of critical care nurses vary somewhat in different countries; however, their shared focus is the critically ill patient's requirement for frequent, vigilant, and protracted observation and support. Critical care nurses, responsible for the most ill cases in acute hospitals, utilize advanced problem-solving, decision-making, and communication skills to deliver appropriate treatment, which includes complex evaluation and monitoring. The primary objective of this investigation was to evaluate the practices of critical care nurses regarding pain management or evaluation, as well as to investigate the perceived barriers and facilitators associated with evaluating pain in critically ill cases.

Rababa et al. (9) identified the primary barriers in this investigation as nurses' insufficient knowledge of evaluating pain tools, cases' communication difficulties, physicians' prescribing of analgesics without considering pain scores, and the lack of standardized protocols and guidelines for pain assessment and controlling. The most cited facilitators involve continuous education as well as professional training in pain management and evaluation, patients' abilities for self-reporting pain, efficient collaboration among nurses and physicians, and helpful discussion regarding cases' pain scores throughout nurse-to-nurse handovers.

The study conducted by **Abdalla Elbiaa et al.,(30)**determinedregarding the nurse-related barriers, most of the studied nurses reported that inadequate time to deliver nonpharmacologic pain relief measures, inadequate staff knowledge, inadequate assessment of painmanagement of barriers to managing pain, nursing workload, and lack of education with pain assessment tools were the most affected barriers in assessing & managing pain in emergency units.Concerning the patients-related barriers, it was found that difficulty to assess patients using a pain scale, inability to communicate with patients, and hemodynamic instability were most reported barriers to assessing and managing pain in the emergency department. Physician associated barriers were ineffective consideration of pain and pain relief.

A descriptive investigation by **Elcigil et al. (31)** identified that the primary patient-related barriers were difficulties in completing pain measures and a lack of demand for results from consumers. A significant number of the participating nurses reported a lack of knowledge regarding seven of nine patient-related barrier issues. Concerning nurse-related obstacles, sixty-five percent of nurses cited insufficient time for case health education. A majority of the nurses (sixty-four percent to eighty-two percent) disagreed with six of seven nurse-related hurdles. A minority of nurses acknowledged that insufficient awareness of pain treatment (ten percent) and apathy among nurses (eight percent) constituted barriers to effective pain management. Nurses identified insufficient pain evaluation and alleviation (sixty-three percent) and physician indifference (forty-seven percent) as the primary impediments associated to physicians.

A cross-sectional investigation by **Chaleewong et al. (32**) indicated that nurses working in intensive care units exhibited insufficient knowledge; most recognized that vital signs are utilized to evaluate pain, yet fewer than half could identify signs of physical dependence following the cessation of opioid administration in critically sickcases. Likewise, adverse attitudes towards pain evaluation and control have been demonstrated. Nevertheless, almost 96.9% of respondents believed that patients are most qualified to appropriately evaluate their pain severity. Nurses in intensive care units are concerned about the adverse impacts of painkillers, cases' refusal to take a pain medication, and patients' ability to communicate their pain in relation to barriers to pain evaluation and control.

In Saudi Arabia, **Almutairi et al. (33)** shown that nurses working in the intensive care units of governmental hospitals in Al-Qassim exhibited inadequate awareness and deficient attitudes toward pain treatment. The significance of these findings is that nurses' focus in intensive care unit settings is on emergencies and documentation, which results in a lower priority for pain management.

Issa et al. (34) evaluated the knowledge of pain treatment among nurses working in intensive care units at King Saud Medical City, Riyadh, Saudi Arabia. The findings revealed that these nurses possessed inadequate knowledge for evaluating and controlling pain in critically ill cases.

CONCLUSION

This systematic review demonstrated that nurses have a fair practices level related to management of pain management &evaluation in critically sick cases, along with identified barriers to effective pain.Nurses'

knowledge and education about pharmacological and non-pharmacological pain management need to improve. Educating cases and caregivers about pain assessment and management is crucial, and improving coordination and communication among physicians and nurses is essential for effective pain assessment and management. We recommend incorporating nurses' education and training courses on pain assessment and management into hospitals' continuous educational programs. Additionally, it is advised that future replication research be conducted with larger sample sizes. Furthermore, intervention investigation focused on the inadequate pain evaluation practices of nurses who are responsible for the care of cognitively impaired cases are required.

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