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SYSTEMATIC REVIEW

Clinical Decision-Making in Nursing in the Emergency Department: Systematic Literature Review Synthesis

Toma de Decisiones Clínicas en Enfermería en el Servicio de Urgencias: Síntesis de la Revisión sistemática de la Literatura

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ABSTRACT

Introduction: clinical decision-making is vital in nursing and impacts care quality and patient safety. The increasing complexity of healthcare demands nurses to integrate theoretical knowledge, clinical experience, and professional judgment. This review synthesizes literature on clinical decision-making in nursing, focusing on theoretical models and strategies for enhancing nurses' competencies globally.
Method: a systematic literature review was conducted using Scopus, PubMed, ScienceDirect, and CINAHL. English-language articles published from 2015 to 2024 were included. Data were thematically analyzed to identify consistent models, themes, and influencing factors.
Results: analysis of 18 articles revealed six core themes in clinical decision-making: recognizing cues, analyzing cues, prioritizing hypotheses, formulating solutions, taking action, and evaluating outcomes. Clinical experience, critical thinking, intuition, team collaboration, technology, cultural context, and professional ethics were key influencing factors. Effective decision-making often combines analytical and intuitive approaches, particularly in complex or emergencies.
Conclusions: clinical decision-making is a multifaceted process shaped by individual factors, workplace dynamics, and systemic support. These findings highlight the need for tailored, evidence-based education and training programs to strengthen decision-making skills among nurses across diverse healthcare settings.

Keywords: Clinical Decision-Making; Nursing; Literature Review; Intuition; Evidence-Based Practice.

RESUMEN

Introducción: la toma de decisiones clínicas es vital en la práctica enfermera, ya que repercute directamente en la calidad de los cuidados y en la seguridad del paciente. La creciente complejidad de la asistencia sanitaria exige que las enfermeras integren los conocimientos teóricos, la experiencia clínica y el juicio profesional. Esta revisión sintetiza la literatura sobre la toma de decisiones clínicas en enfermería, centrándose en los modelos teóricos y las estrategias para mejorar las competencias de las enfermeras a nivel global.
Método: se realizó una revisión sistemática de la literatura utilizando Scopus, PubMed, ScienceDirect y CINAHL. Se incluyeron artículos en inglés publicados entre 2015 y 2024. Los datos se analizaron temáticamente para identificar modelos consistentes, temas y factores influyentes.
Resultados: el análisis de 18 artículos reveló seis temas centrales en la toma de decisiones clínicas: reconocer pistas, analizar pistas, priorizar hipótesis, formular soluciones, tomar medidas y evaluar resultados. Los factores clave que influyen son la experiencia clínica, el pensamiento crítico, la intuición, la colaboración

en equipo, la tecnología, el contexto cultural y la ética profesional. La toma de decisiones eficaz suele combinar enfoques analíticos e intuitivos, sobre todo en situaciones complejas o de emergencia.
Conclusiones: la toma de decisiones clínicas es un proceso multifacético moldeado por factores individuales, la dinámica del lugar de trabajo y el apoyo sistémico. Estos resultados ponen de manifiesto la necesidad de programas de formación y educación adaptados y basados en la evidencia para reforzar las habilidades de toma de decisiones entre los enfermeros de diversos entornos sanitarios.

Palabras clave: Toma de Decisiones Clínicas; Enfermería; Revisión Bibliográfica; Intuición; Práctica Basada en la Evidencia.

INTRODUCTION

Clinical decision-making is at the core of professional nursing practice, impacting patient safety, intervention effectiveness, and overall healthcare quality. In an increasingly complex, dynamic, and patient-oriented modern healthcare system, nurses' ability to make quick, appropriate, and evidence-based clinical decisions is becoming increasingly crucial.[1] Nurses' decisions involve technical or procedural aspects and contain ethical, psychological, and collaborative considerations, making it a multidimensional skill.[2]

International literature shows that various intrinsic and extrinsic factors influence clinical decision-making in nursing. Factors such as clinical experience, intuition, evidence-based knowledge, interprofessional team collaboration, work environment conditions, time pressure, and cultural and legal aspects play an essential role in the process.[3,4] Phenomenological studies have even shown that decision-making is a reflection of nurses' values, meaning of professionalism, and sensitivity to patients' conditions.[5] Meanwhile, technological approaches such as clinical decision support systems (CDSS) have begun to strengthen this process while still demanding analytic and empathic skills from nurses as key decision-makers.[2,4]

While many studies have explored clinical decision-making, a unified synthesis that maps key factors from different contexts and theoretical approaches is still limited, particularly in describing conceptual frameworks that can be applied across cultures and healthcare systems.[6] This void presents both a challenge and an opportunity to design training, educational curricula, and clinical policies that strengthen nurses' clinical decision-making systematically and sustainably.[7,8]

Therefore, this article aims to synthesize the literature on clinical decision-making in nursing based on key findings from various international studies. The article identifies key dimensions influencing clinical decision-making using a narrative and comparative review approach. It proposes a more comprehensive conceptual model to support safe, reflective, and adaptive nursing practice across global healthcare contexts.

METHOD

The methodology of this systematic literature review was designed to identify, analyze, and synthesize relevant literature on clinical decision-making by nurses in emergency department (ED) settings based on PRISMA 2020.[9] A comprehensive literature search was conducted across four major databases: Scopus, PubMed, ScienceDirect, and CINAHL. Keywords used for the search were based on Medical Subject Headings (MeSH) terms, including: "Clinical Decision-Making," "Nursing," "Emergency Service, Hospital," "Evidence-Based Nursing," "Intuition," and "Interprofessional Relations." The search strategy was constructed using Boolean operators as follows: ("Clinical Decision-Making" OR "Decision-Making") AND ("Nursing" OR "Nurse") AND ("Emergency Service, Hospital" OR "Emergency Care") AND ("Evidence-Based Nursing" OR "Evidence-Based Practice") AND ("Intuition" OR "Critical Thinking") AND ("Interprofessional Relations").

Inclusion criteria comprised articles written in English, published between 2015 and 2024, focusing on clinical decision-making by nurses in ED settings, employing quantitative, qualitative, mixed-methods, or review designs, and available in full text. Conversely, exclusion criteria included editorial, opinion pieces, or abstracts without full text; studies unrelated to nursing or the ED context; and studies that failed to meet methodological validity. The initial search yielded 2120 articles, with 520 duplicates removed, leaving 1600 articles for title and abstract screening. During this phase, 1200 articles were excluded for irrelevance, resulting in 378 articles subjected to full-text review. Of these, 360 articles were excluded due to lack of focus on clinical decision-making, methodological limitations, or incomplete data, culminating in 18 articles being included in the final analysis (figure 1).

The quality of the included articles was critically appraised using appropriate tools: CASP (Critical Appraisal Skills Programme) for qualitative studies, MMAT (Mixed Methods Appraisal Tool) for mixed-methods studies, and the JBI (Joanna Briggs Institute Checklist) for quantitative analyses. Risk of bias assessment revealed that 15 articles demonstrated low risk, while 3 exhibited moderate risk, primarily due to study design and

sample selection issues. This systematic methodology ensured that only relevant and high-quality literature was analyzed to provide robust insights and findings.

RESULTS AND DISCUSSION

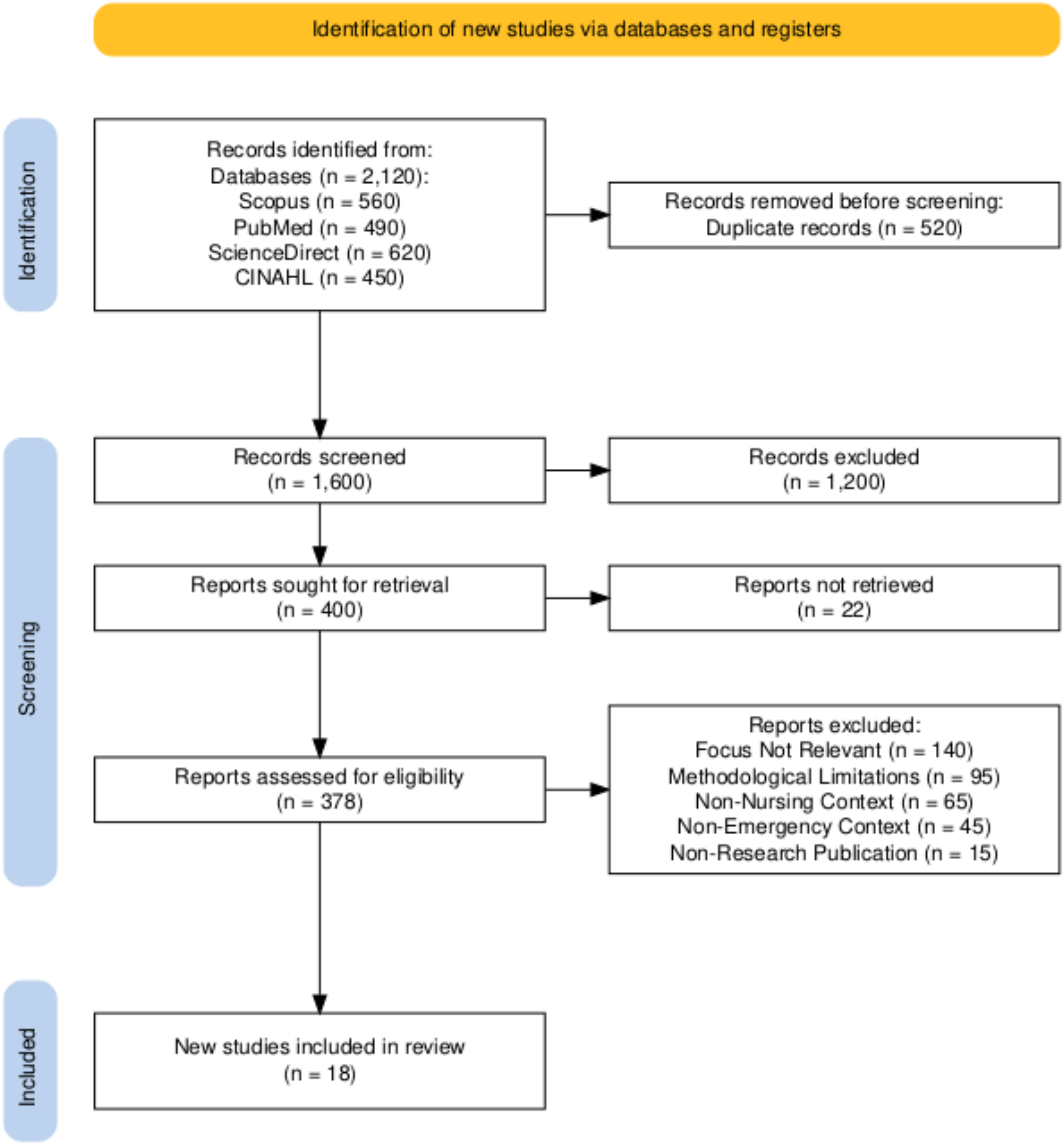

Figure 1. PRISMA Flow Chart

Analyzing Cues

Once cues are recognized, the next step is to analyze them. This process requires critical thinking skills to relate one data to another, distinguish between normal and abnormal conditions, and identify clinical patterns.[28,29] In the studies analyzed, cue analysis was often done reflectively, individually, or in team collaboration.[30] More accurate decisions generally result from analyses considering more than one possible cause.[31] Technological support, such as a Clinical Decision Support System (CDSS), has also proven helpful in speeding up the analysis process and reducing the risk of cognitive bias. However, its utilization should be tailored to the context and capabilities of the user.[32]

The researcher assumes that while CDSS and similar technologies enhance decision-making speed and accuracy, they should not replace critical thinking. Instead, such tools must serve as an adjunct to the nurse's clinical judgment, which remains essential in complex, context-specific scenarios. The reflective nature of cue analysis further emphasizes the need to foster individual and team-based analytical skills through structured training programs.

Table 1. Synthesis Table

No	Year	Author	Title	Methods	Results
1	2000	J. Cioffi	A study of the use of past experiences in clinical decision-making in emergencies	Interviews were conducted with 32 registered nurses with at least five years of professional experience.	Nurses drew upon their previous experiences, applying them through three commonly recognized heuristics: representativeness, availability, and anchoring with adjustments.[10]
2	2002	Dale Pugh	A Phenomenological Study of Flight Nurses' Clinical Decision-Making in Emergency Situations	The in-depth interviews were examined using Colaizzi's method, using a phenomenological approach. The themes that emerged depicted the phenomenon of clinical decision-making in emergency contexts.	The interconnected themes of 'how to Know the Patient, Context of Knowing, and Reflective Practice revealed the overall understanding of knowing. The theme ' how to know the patient' included subthemes such as intuitive, experiential, and objective knowledge. Context of Knowing' was shaped by subthemes like the flight environment, limited or no involvement in triage, familiarity with colleagues, working independently, level of experience, and adherence to practice guidelines. The final theme, Reflective Practice, Encompasses subthemes of self-critique and modifications in clinical practice.[11]
3	2012	Lisa Wolf	An Integrated, Ethically Driven Environmental Model of Clinical Decision-Making in Emergency Settings	A quantitative descriptive correlational study was conducted using a purposive sample of 200 nurses working in emergency departments. The study measured clinical decision-making accuracy, moral reasoning, perceived care environment, and demographic characteristics. Data analysis involved bivariate correlations using Pearson's product-moment correlation coefficient, chi-square tests, and multiple linear regression analysis.	The refined, integrated, ethically-driven Environment-Based Clinical Decision-Making Model (IEDEM-CD) highlighted moral reasoning and the care environment as key factors that significantly impact the accuracy of clinical decision-making. [12]
4	2013	Margaret Fry, Casimir MacGregor	Confidence and impact on clinical decision-making and behavior in the emergency department	This qualitative exploratory study was conducted across multiple centers and involved 52 participants. Data collection included 36 face-to-face interviews (28 women and eight men) and 16 non-participant observations (13 women and three men) at three locations.	This research provided new insights into self-confidence, self-efficacy, and the influence of contextual factors on behavior regulation. Findings indicated that self-confidence is vital, supporting nurses in problem-solving and critical thinking to identify the most appropriate course of action.[13]
5	2014	Meral Ucuzal, Runida Doğan	Emergency nurses' knowledge, attitude, and clinical decision-making skills about pain	This descriptive study occurred between September and October 2012 at a government and university hospital in Malatya, Turkey. Out of 98 nurses employed in the emergency departments of these hospitals, 57 completed and returned the questionnaire, resulting in a 58 % response rate. Data collection instruments included the demographic information questionnaire, the knowledge and attitudes about pain questionnaire, and the clinical decision-making survey. The data were analyzed using frequency, percentage, mean, and standard deviation measures.	Among the nurses who participated, 75,4 % acknowledged that the patient's pain report is the most trustworthy indicator for pain assessment. Nearly half of the nurses felt patients should be allowed to tolerate pain as much as possible before administering pain relief. Additionally, most nurses believe that patients who are asleep do not feel pain and that pain management should be postponed because it could interfere with diagnosis. These findings imply that pain assessment scales are not commonly utilized. Furthermore, only 35,1 % of nurses indicated maintaining a pain log.[14]

6	2015	Elizabeth Mizerek, Lisa Wolf	To Foley Or Not To Foley: Emergency Nurses' Perceptions Of Clinical Decision Making In The Use Of Urinary Catheters In The Emergency Department	This study employed a qualitative exploratory approach, utilizing focus group discussions for data collection and analysis.	The analysis revealed several key themes, including frequency, sense of belonging, education and competence, interactions with family, communication, and factors that hinder or support the process.[15]
7	2019	Beatriz Paulina Espinosa-Rivera, Laura Morán-Peña, María Aurora García-Piña, Patricia González-Ramírez, Cristina Margarita López-Ruíz	Self-Confidence and Anxiety as Intervening Factors in Clinical Decision-Making in Newly Nursing Bachelor Graduates	This study employed a descriptive, comparative, and cross-sectional research design, utilizing the Nurses Anxiety and Confidence with Clinical Decision-making Scale (NASC-CDM) as the primary measurement tool.	The findings showed that 69 % of newly graduated bachelor of nursing students reported high self-confidence, while 66 % experienced low anxiety levels. There were statistically significant differences in self-confidence levels based on the graduates' employment status. Although the average anxiety levels were higher, the differences were not statistically significant.[16]
8	2020	Nesrin Sen Celasin, Sadiye Dur, Dilek Ergin, Duygu Karaarslan	Knowledge, Attitude, and Clinical Decision-Making Abilities of Pediatric Nurses Regarding Pain Management	This descriptive and analytical study involved 131 pediatric nurses employed in pediatric units at university and government hospitals in Manisa, Turkey. Data were gathered using the nurse information form, the questionnaire on nurses' knowledge and attitudes toward pain, and the clinical decision-making questionnaire.	The average score for pediatric nurses' knowledge and attitudes toward pain management was 7,32 (SD=7,00), with 45 % at a moderate level. While age, profession, and years of experience had no significant impact, education level and work unit influenced scores. Most nurses were informed about pain assessment: 61,1 % assessed pain by observing behavior, and 65,6 % used pain scales.[17]
9	2020	Rubio-Navarro A, Garcia-Capilla D, Torralba-Madrid MJ,Rutty J	Decision-making in an emergency department: A nursing accountability model	Conducted in a large UK emergency department, this study used ethnographic content analysis on data from 186 nurses through observations, 34 interviews, and a review of 54 clinical policies.	The study produced a cyclical model of clinical nursing accountability, highlighting it as a dynamic, subjective process between nurses and healthcare institutions. It also examined how various accountability factors affect clinical decision-making.[18]
10	2020	Nikolina Farcˇic , Ivana Barać, Robert Lovrić, Stana Pacˇarić, Zvjezdana Gvozdanović, Vesna Ilakovac	The Influence of Self-Concept on Clinical Decision-Making in Nurses and Nursing Students: A Cross-Sectional Study	This 2028 cross-sectional study was conducted at the faculty of dentistry and health and the university hospital center in Osijek, Croatia. It involved 568 hospital nurses and 129 BSc nursing students. Data were gathered using the clinical decision-making in nursing scale (CDMNS) and the nurse self-concept questionnaire (NSCQ).	No Correlation was found between clinical decision-making (CDM) and nurse self-concept (NSC) among students and hospital nurses. However, hospital nurses scored significantly higher in CDM, while students showed higher overall NSC levels.[19]
11	2021	DemitzoglouMichael, Bakalis Nikolaos, Michalopoulos Antigone, Tzenalis Anastasios, Kiekkas Panagiotis, Kotsela Georgia, Drakopanagiotaki Aikaterini, Filiotis Nikolaos	Clinical Decision-Making of Greek Nurses Working in Health Centers, Emergency Rooms, Medical-Surgical Clinics, and ICUs	Questionnaires and clinical decision-making cards (Using Q methodology) were created to explore factors influencing clinical decision-making.	Nurses at the health center showed moderate decision-making for dyspnea and incomplete decisions for CPR. ED nurses made good decisions for MI and moderate decisions for dyspnea. Medical Clinic nurses had moderate decisions across all scenarios. Surgical clinic nurses demonstrated good decisions for dyspnea and moderate decisions for CPR. ICU nurses consistently made good decisions in all scenarios.[20]

12	2023	Angela Yee	Clinical decision-making in the intensive care unit: A concept analysis	Following Walker and Avant's eight-step approach, nursing databases were searched for studies from 1980 to 2022 that detailed the antecedents, defining characteristics, outcomes, and empirical evidence related to clinical decision-making in intensive care settings.	In the ICU, clinical decision-making is a complex process in which nurses quickly identify patient issues and act to improve changing conditions, relying on assessment, cue recognition, experience, teamwork, intervention planning, and risk evaluation.[21]
13	2023	Lisa Wolf, Hannah S. Noblewolf, Michael Callihan, Michael D. Moon,	What If It Were Me? A Qualitative Exploratory Study Of Emergency Nurses' Clinical Decision-Related To Obstetrical Emergencies In The Context Of A Post-Roe Environment	A qualitative exploratory study used interviews (n=13) and situation analysis, identifying human elements like nurses, service providers, pregnant women, and families, alongside non-human elements such as legislation, education, and legal awareness.	Social world mapping revealed challenges such as inexperience, conflicts over clinical duties, confusion about legislation, and passivity regarding patient care impacts. Position mapping highlighted overlapping views on the topic and silence surrounding abortion laws.[22]
14	2022	Annissa Novalia, Shanti Farida Rachmi, Krisna Yetti	Clinical decision-making of bachelor and clinical internship (professional) nursing students in Indonesia	This cross-sectional study involved 216 university students from various programs, selected through stratified random sampling. Data were collected using the nursing decision-making instrument 2014, translated into Indonesian, and validated (Cronbach's a=0,816).	Univariate analysis showed students' clinical decision-making abilities: 59,2 % analytical, 40,3 % quasi-rational, and 0,5 % intuitive.[23]
15	2022	Emine Ilaslan, Derya Adıbelli, Gamze Teskereci, Sengul Uzen Cura	Development of nursing students critical thinking and clinical decision-making skills	Using a pretest-posttest quasi-experimental design, this study involved 127 first-year nursing students from two Turkish schools (A and B) in May-June 2020. Data were collected using demographic forms, a critical thinking disposition scale, and a clinical decision-making scale.	The study found no effect of online distance education on first-year nursing students' critical thinking or clinical decision-making levels. Still, a significant positive correlation existed between the two skills.[24]
16	2023	Ahmed Yahya Abu Arra, Ahmad Ayed, Dalia Toqan, Mohammed Albashtawy, Basma Salameh, Adnan Lutfi Sarhan, Ahmad Batran	The Factors Influencing Nurses' Clinical Decision-Making in Emergency Department	This cross-sectional study involved 227 emergency nurses from Palestinian hospitals. Data were collected using clinical decision-making on the nursing scale.	The mean decision-making score was 3,3. Degree and working hours predicted 11,7 % of the variance, with key subscales including options search and consequence evaluation.[25]
17	2023	Ka Ming Chow, Ricky Ahmat, Alice W.Y. Leung, Carmen W.H. Chan	Is high-fidelity simulation-based training in emergency nursing effective in enhancing clinical decision-making skills? A mixed methods study	A mixed-methods study with quasi-experimental and qualitative approaches.	Post-intervention, participants showed improved ability and confidence and reduced anxiety in decision-making, with high satisfaction toward simulation. Four qualitative themes supported a significant link between generic ability and decision-making.[26]
18	2023	Mehran Farzaneh, Vahid Saidkhani, Kambiz Ahmadi Angali, Masoumeh Albooghobeish	Effectiveness of the SBAR-Based Training Program in Self-efficacy and Clinical decision-making of Undergraduate Anesthesiology Nursing Students: A Quasi-experimental Study	This quasi-experimental study involved 70 nursing students randomly assigned to intervention and control groups. The intervention group attended 8-session SBAR courses over 4 weeks. Various statistical tests compared pre- and post-intervention self-efficacy and clinical decision-making.	The intervention group had significantly higher self-efficacy (mean 140,66) and clinical decision-making scores (mean 76,31) than the control group. Clinical decision-making skills notably improved, with 22,9 % reaching the intuitive-interpretative level post-intervention (P<0,001).[27]

Prioritizing Hypotheses

This stage focuses on the nurse's ability to compile a list of possible problems or diagnoses based on the cues that have been analyzed and then prioritize hypotheses based on clinical urgency.[33] In the literature, the ability to prioritize is strongly related to understanding pathophysiology, clinical experience, and risk management skills.[34] Competent nurses can eliminate irrelevant hypotheses and select one or two main hypotheses to base subsequent interventions. Emergencies often demand quick decisions with a top priority on life-threatening conditions.[35,36] Therefore, simulation training and case-based scenarios are highly recommended to hone these skills.

The researcher assumes that prioritization is not merely a cognitive exercise but also influenced by the nurse's emotional regulation under stress. Therefore, fostering resilience and stress management techniques is equally important in training programs. Additionally, the researcher posits that incorporating real-time feedback during simulations can enhance the nurse's ability to prioritize effectively in actual clinical settings.

Generating Solutions

The nurse designs nursing interventions or actions based on the prioritized hypotheses at this stage. The literature suggests that effective solutions usually come from a combination of evidence-based approaches and contextualized practice experiences.[37] Creativity and flexibility are also key, especially when resources are limited. Interprofessional shared decision-making is also one approach that is widely discussed, especially in intensive care units or emergency rooms.[38] Formulating solutions goes beyond determining physical interventions and includes considering the patient's psychosocial, spiritual, and ethical aspects.[39]

The researcher asserts that while evidence-based approaches provide a solid foundation, nurses' adaptability in rapidly evolving scenarios is equally critical. Shared decision-making should be a standard practice but requires an institutional culture that values collaboration across disciplines. The researcher also assumes ethical decision-making and cultural sensitivity training are vital for creating holistic, patient-centered interventions.

Taking Actions

Once a solution has been determined, nursing actions must be taken immediately according to clinical priority and urgency. The primary focus is speed, accuracy, and safety in implementing actions.[40] The literature review found that successful implementation highly depends on nurses' technical skills, effective communication, and the readiness of support systems, including equipment and team support. Periodic evaluation of the actions' effectiveness is an integral part of this stage, so nurses must be able to adapt their actions based on the patient's response. Actions must also be well-documented to ensure continuity of care.[41]

The researcher emphasizes that while technical skills are foundational, the ability to adapt dynamically to unexpected changes during implementation is equally critical. Moreover, effective communication within the team, especially in high-pressure environments, requires consistent practice and coordination. The researcher posits that empowering nurses with leadership training could enhance team dynamics and improve outcomes during the implementation phase.

Evaluating Outcomes

The final stage is to evaluate the results or outcomes of the nursing actions that have been taken. This evaluation includes monitoring patient condition changes and whether the interventions impact the expected goals. If the results are inappropriate, the nurse needs to review the decision-making process from the beginning and make improvements.[42] Evaluation is cyclical and forms the basis for further decision-making. In addition, the literature shows the importance of patient and family involvement in the evaluation process to obtain a holistic picture of the success of the intervention. Documentation of evaluation results is also an essential communication tool between health team members.[43]

The researcher assumes that the evaluation process is not solely about outcomes but also serves as a learning mechanism for improving future interventions. Involving patients and families adds value by aligning interventions with patient-centered goals and ensuring accountability. The researcher also posits that creating a culture of feedback and reflective practice among healthcare teams can enhance the quality of evaluation processes and patient outcomes.

CONCLUSIONS

Clinical decision-making in nursing is a complex and dynamic process involving six main stages: recognizing cues, analyzing cues, prioritizing hypotheses, formulating solutions, taking action, and evaluating outcomes. Each stage is interrelated and forms a deep clinical thinking cycle. Various factors, such as the level of clinical experience, critical thinking skills, use of reflection and intuition, team and organizational support, clinical technology, and cultural and ethical contexts influence this process. This literature synthesis confirms that effective clinical decision-making relies not only on theoretical understanding but also on the integration of

analytical and intuitive reasoning and adaptation to complex and uncertain real-world situations. Therefore, strengthening clinical decision-making competencies in nursing education and practice is very important to improve the safety and quality of patient care.

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