

## Review of the Clinical Decision-Making Skills in Undergraduate Nursing Students

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### Abstract

**Objective:** *The intention of this systematic literature review is to describe and explore the existing eminence of research evidence about clinical decision-making skills in undergraduate nursing students.*

**Methods:** *A review was conducted to determine the current knowledge approximately the chosen topic. PubMed and Science Direct online databases or systematic engine search were utilized to obtain the research articles relevant to this systematic review. The data consisted of 46 research articles about clinical decision-making skills using inclusion and exclusion criteria. The researcher used content and thematic analysis as a qualitative approach in reviewing the articles. Data analysis was implemented from November 10, 2018 to January 21, 2019.*

**Results:** *This systematic literature review revealed three major themes emerged in this study. Such major theme includes pre-requisite skills, clinical decision making skills and clinical judgment. The first theme emerged is the pre-requisite skills. Sixteen (16) studies have cited pre-requisite skills in clinical decision-making. Under pre-requisite skills, the following sub-themes emerged which includes knowledge, skills, self-confidence, and self-efficacy. The second theme emerged is the clinical decision-making skills. In here, twenty-four (24) studies have supported that decision-making is an important clinical skill for undergraduate nursing students. Last major theme emerged is the nursing clinical judgment. Under this theme, eleven (11) studies have supported nursing clinical judgment. Three sub-themes were identified that influence nursing students' clinical judgment. These include reflection, the learning environment and clinical teachers.*

**Conclusion:** *In general, the need to assist undergraduate nursing students in anticipating and exercising pre-requisite skills, clinical decision making and professional nursing judgment is needed in their clinical placement setting.*

**Keywords:** *nursing students, pre-requisite skills, clinical decision-making skills, nursing clinical judgment, clinical placement*

### 1. INTRODUCTION

Healthcare field nowadays, the nurse is confronted with gradually multifarious disputes and circumstances. Currently, the decision-making fragment of problem-solving has developed progressively complicated and demands critical thinking. [1] Over the last 15 years, the study showed that decision-making skills are recurrently and significantly deteriorating among nurses and nursing students. [2] Studies even cited that graduates are incapable to display seemly clinical decision-making skills in clinical areas. [3] Numerous nursing students reported a deficiency

of vigilance and competency with respect to their capacity to achieve nursing responsibilities. [4] In this connection, nurse educators have recognized that several nursing students have inconvenience in performing decision-making in clinical practice. [5] Thus, caring for patients requires prompt and effective decision-making abilities. [4]

Critical thinking is a multidimensional skill, a cognitive or mental process or set of procedures. It entangles intellectual and persistent, logical, philosophical, sensible, an outcome-directed view grounded on a body of knowledge, as well as consideration of all obtainable information and

mindsets. [6] Thus, student nurses need good clinical reason skills because deprived clinical reasoning skills can prime to failure-to competently care worsening patients. [7]

On the other hand, clinical decision-making is a primary part of nursing practice. [8] Decision-making is an ultimate skill necessitated and recognized by the Nursing Council and should be succeeded in pre-registration nursing programs. Frequently, students do not acknowledge that voluminous of the undertakings they accomplish on clinical placement engage decision-making skills. Thus, nursing students must demonstrate their decision-making skills in clinical placement. [9]

There had been limited studies about the capability to utilize information for clinical nursing decision-making. [2] Also, little research has been conducted that examines ways to recuperate the clinical decision-making capability of nursing students. [10] This prompted the researcher to develop a research paper entitled “A systematic review of clinical decision making and critical thinking skills among undergraduate nursing students” that will examine and explore the current status of research evidence about the use of decision making and critical thinking among nursing students in the clinical area.

## 2. SEARCH METHODS

A review of the literature was undertaken using a systematic approach. A review was conducted to determine the current knowledge about the clinical decision-making skills among nursing students. This systematic review was conceded subsequently by a wide-ranging literature exploration exhausting electronic databases such as PubMed, CINAHL, and Science Direct. Online databases or engine search were utilized to obtain the research articles relevant to this systematic review and also to enable high search sensitivity. Search terms and subject headings were identified and searched. The selected articles were authored by researchers from England, Turkey, Brazil, Australia, Greece, USA, Canada, Korea, UK, Sweden, Spain and Iran.

### 2.1. Search Outcomes

Eighty-two relevant research articles were retrieved that were published from the years 2009

to 2019. All obtained research articles are about clinical decision-making skills among nursing students. Thus, 31 eligible studies were identified. Inclusion criteria of the study include the following: a) All selected articles must be published in English language; b) All articles must be published in peer-reviewed journals; c) All articles must be published from at least 10 years from now (2009-2019); The researcher decided to include a ten-year period of journal publication to be sufficient enough to make a comprehensive literature search. d) All articles must include undergraduate nursing students as the study population; e) All articles must contain at least one of the following keywords clinical decision-making skills, nursing students, clinical placement; and lastly f) all articles must either be descriptive design, correlational study, observational study, exploratory study, phenomenological qualitative study or mixed method. Thus, all studies were incorporated in this review if they convened the inclusion criteria.

On the other hand, Exclusion criteria are criteria which may not allow any articles to be included in the study. The exclusion criteria include the following: a) All case studies and case reports were omitted due to excessive conceivable biases; b) All experimental designs (RCT, quasi studies) were also excluded; and c) All articles with secondary data and not report primary data like meta-analysis, meta-synthesis, and integrative literature review.

### 2.2. Data Extraction

Key information, title review, research design, sample participants, research focus, and study outcomes were extricated from the preferred articles. Data were extracted by two reviewers to perform a quality assessment and to evaluate the quality of studies. The primary researcher self-sufficiently fulfilled abstraction form while the second researcher double-checked the first reviewer's entry for verification, accuracy, clarity and completion purposes. Data analysis were performed from November 10, 2018 to January 21, 2019.

### 2.3. Data Synthesis

The researcher used content analysis and thematic analysis as qualitative approaches in

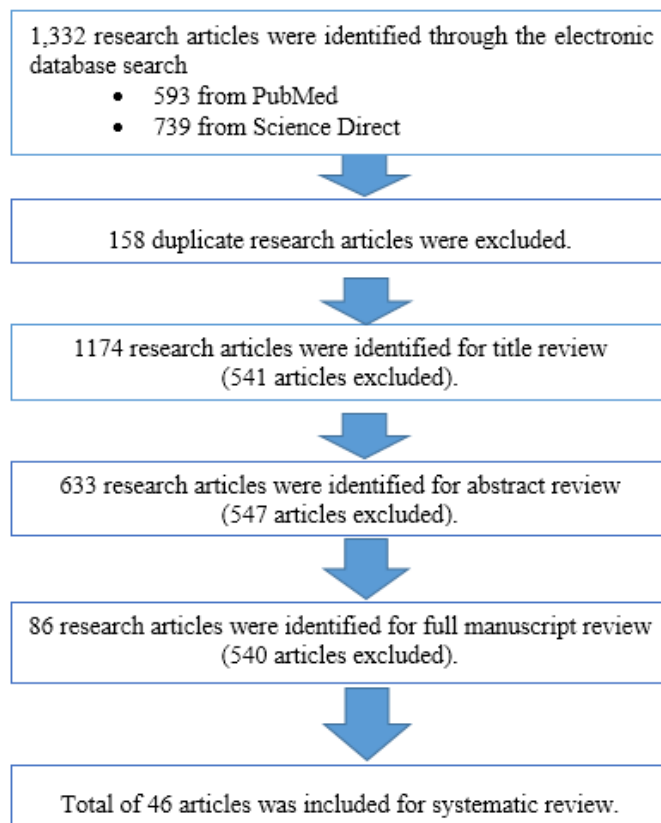
reviewing the articles. Content analysis is a research method for studying social phenomena using the available documents, artifact, and literature to examine pattern in a systematic manner/way.

On the other hand, thematic analysis was performed to integrate the information presented in this review.

**Table1**

Authors	Publication	Study Setting	Study Population	Key Findings
Griffith & Board	<i>Br J Community Nurs</i>	England	Student nurses	Pre-requisite skills
Kaya, et. al.	<i>Nurse Educ Today</i>	Istanbul	Student nurses	Pre-requisite skills
Menezes, et. al.	<i>Rev Esc Enferm USP</i>	Brazil	Student nurses	Pre-requisite skills; clinical decision-making
Jeffrey & Bourgeois	<i>JB I Libr Syst Rev</i>	Australia	Student nurses	Pre-requisite skills; clinical decision-making
Papathanasiou, et. al.	<i>Acta Inform Med</i>	Greece	Student nurses	Pre-requisite skills
Bucknall, et. al.	<i>J Adv Nurs</i>	Australia	Student nurses	Pre-requisite skills
Ramos, et. al.	<i>Nurs Ethics</i>	Brazil	Student nurses	Pre-requisite skills
White, et. al.	<i>Nurs Educ</i>	Northeastern USA	Student nurses	Pre-requisite skills; clinical decision-making
Woda, et. al.	<i>Nurs Educ Pract</i>	Wisconsin USA	Student nurses	Pre-requisite skills
Hart, et. al.	<i>J Nurs Meas</i>	Southeastern USA	Student nurses	Pre-requisite skills
Lewis, et. al.	<i>Open Nurs J</i>	UK	Student nurses	Pre-requisite skills
White	<i>J Nurs Educ</i>	Northeastern USA	Student nurses	Pre-requisite skills
Woda, et. al		Wisconsin USA	Student nurses	Pre-requisite skills; clinical decision-making
Landeen, et. al.	<i>Nurs Educ Pract</i>	Ontario Canada	Student nurses	Pre-requisite skills; ; clinical judgment
Bussard	<i>J Nurs Educ</i>	Ohio USA	Student nurses	Pre-requisite skills; clinical decision-making; clinical judgment
Benham & Hawley	<i>JB I Database System Rev Implement Rep.</i>	Texas USA	Student nurses	Clinical decision-making
McCallum, et. al.	<i>Nurs Educ Pract</i>	UK	Student nurses	Clinical decision-making
Choi, et. al.	<i>Nurs Educ Today</i>	Korea	Student nurses	Clinical decision-making
Burden, et. al.	<i>J Adv Nurs</i>	UK	Student nurses	Clinical decision-making; ; clinical judgment
Andrew & Baxter	<i>Nurs Educ Perspect</i>	New Jersey USA	Student nurses	Clinical decision-making
Squirrell & Hunt	<i>Nurs Child Young People</i>	England	Student nurses	Clinical decision-making
Ellis	<i>Br J Nurs</i>	North Carolina	Student nurses	Clinical decision-making
Nilsson & Lindstorm	<i>Int Emerg Nurs</i>	Sweden	Student nurses	Clinical decision-making
McMahon & Christopher	<i>Nurs Educ Scholarsh</i>	Massachusetts	Student nurses	Clinical decision-making
Murray, et. al.	<i>Nurs Educ Today</i>	UK	Student nurses	Clinical decision-making
Khalili	<i>Clin Teach</i>	Ontario Canada	Student nurses	Clinical decision-making
Peddle, et. al.	<i>Nurs Educ Today</i>	Australia	Student nurses	Clinical decision-making
Forbes, et. al.	<i>Nurs Educ Today</i>	Australia	Student nurses	Clinical decision-making
Cereto, et. al.	<i>Nurs Educ Today</i>	Spain	Student nurses	Clinical decision-making; ; clinical judgment
Guhde	<i>Nurs Educ Perspect</i>	Ohio USA	Student nurses	Clinical decision-making
Pouralizadeh, et. al.	<i>J Clin Diagn Res</i>	Iran	Student nurses	Clinical judgment
Hines & Wood	<i>J Nurs Educ</i>	Alabama USA	Student nurses	Clinical judgment
Andersen	<i>Nurs Educ Pract</i>	Canada	Student nurses	Clinical judgment
Edelen & Bell	<i>J Nurs Educ</i>	Connecticut	Student nurses	Clinical judgment
O' Rourke & Zerwic	<i>J Nurs Educ</i>	Chicago USA	Student nurses	Clinical judgment
Glynn	<i>J Nurs Educ</i>	Massachusetts	Student nurses	Clinical judgment

## 2.4. Flowchart of Literature Search (PRISMA)



The researcher has utilized PRISMA as an evidence-based minimum set of items for reporting in systematic reviews. PRISMA is used as a basis for reporting and critical appraisal of published systematic reviews of other types of research. It aims to help authors improve the reporting of systematic reviews.

1. 1,332 research articles were identified through electronic database search (593 articles were from PubMed, and 739 were from ScienceDirect).
2. Afterward, 158 duplicate studies were excluded.
3. Next, 1174 research articles were identified for title review (541 articles removed).
4. On the other hand, 633 research articles were identified for abstract review. (547 research articles were excluded).
5. 86 articles were included in the in-depth review using full manuscript assessment (research design, sample participants, research focus, and study outcomes) using inclusion and exclusion criteria (40 articles remained excepted).
6. Lastly, a total of 46 research articles were included for systematic review.

## 3. RESULTS AND DISCUSSION

This systematic review revealed at least three general themes emerged in this study. Such major themes include pre-requisite skills, clinical decision-making skill, and clinical judgment. The first theme talks about the pre-requisite skills that are indispensable to sustain clinical decision-making. The second theme is the main highlight which discusses the importance and relevance of clinical decision-making skill in undergraduate nursing students. The last theme is clinical judgment the outcome as a result of the use of decision-making in the clinical practice settings.

### 3.1. Pre-Requisite Skills for Clinical Decision-Making

Based on the result of this systematic review, sixteen (16) studies have cited pre-requisite skills in clinical decision-making. Accordingly, pre-requisite skills are fundamental skills that are necessary for a nursing student to perform clinical decision-making abilities. The following sub-themes under pre-requisite skill emerged, namely: theoretical knowledge, clinical technical skills, self-confidence, and self-efficacy.

First basic skill is theoretical knowledge. Seven (7) studies have shown that nursing students' prior knowledge influences and is necessary for decision-making in the clinical setting [11, 12, 11, 14, 15, 16, 17]. Knowledge as an

imperative and dominant feature of student nurses is important in the practice settings. [12] Thus, it can be stated that the professional and theoretical knowledge is a non-technical skill which is essential in critical thinking, clinical reasoning, and decision-making process for undergraduate nursing students. [13, 14] Moreover, nursing schools must assist students in the integration and application of their theoretical knowledge. [15] Because uncertainty, lack of knowledge, inadequate information, untimely diagnosis and disappointment to deliberate selections when concerning for patients is possible to affect and prime to low quality decisions. [16]

Second pre-requisite skill is the clinical technical skill of the student nurse. Three (3) studies have demonstrated that nursing students' clinical skill is necessary for decision-making and clinical reasoning in the clinical setting [14, 15, 17]. Nursing students must develop his nursing technical skills competency to be best used in the clinical practice setting. Moreover, nursing schools must assist students in the integration and application of their clinical skills in the clinical areas. [15]

Last pre-requisite skill is self-efficacy. Self-efficacy is defined as one's ability to succeed in specific situation necessary to accomplish a task. Students must develop self-efficacy in their own clinical abilities. [21] One study has cited that graduate student nurses are incapable to exhibit appropriate clinical decision-making skills because of truncated self-efficacy. [3] Thus, undergraduate nursing students must practice self-efficacy to be effective, efficient and productive in eliciting clinical reasoning in stressful clinical situations. [19]

In general, knowledge, skills, self-confidence, and self-efficacy are pre-requisite skills needed to perform clinical decision making among undergraduate nursing students decision-making abilities. The following sub-themes under pre-requisite skill emerged, namely: theoretical knowledge, clinical technical skills, self-confidence, and self-efficacy.

### **3.2. Decision-Making as an Important Clinical Skill for Undergraduate Nursing Students**

Based on the result of the systematic review, twenty-four (24) studies have supported that decision-making is a significant clinical skill for undergraduate nursing students. Accordingly, decision making skill is a high-level skill that is difficult to assess [26]. Patient care compels

timely and successful decision-making capabilities [4]. Such skill is essential to recognize and intervene the patient whose state is declining [27]. One study cited that new graduate nurses are incompetent to establish suitable clinical decision-making skills [3]. The need to exhibit clinical decision-making skill is expected to entry-level graduate nurse [14]. Habitually, students do not acknowledge that countless of the responsibilities they play on clinical placement encompass decision-making skills [9].

Students must be confident in the utilization of clinical decision-making. [27] This can be achieved by attaining basic competence in healthcare decision-making of the students during their clinical practicum. [28, 29] Furthermore, clinical decision making is a keystone skill and essential for undergraduate student nurses because it Clinical decision-making skill enables the nursing student to complete nursing interventions and provide nursing care aligned with course learning objectives. [13, 18, 23, 25, 30, 31]

In line with this, decision making is a central skill necessitated and identified by the Nursing Council and must be achieved in pre-registration nursing programs. [9] Nursing schools and nurse educators must help nursing students enhance learning clinical decision-making. [3] This can be achieved by developing cognitive strategies which can help reduce errors in clinical decision-making. [14] Also, student nurses must be provided with a multitude of case situations where clinical decisions are built those impact patient outcomes. [32] Therefore, the need to assist students in anticipating and exercising decision making is needed. [14] Also, nursing students must demonstrate their decision-making skills in clinical placement. [9] Students' clinical decision-making is a continuous development during the whole clinical task. [33]

In addition, decision-making is important in the management of rare complex crisis situations. The need to foster student ability to use clinical decision-making to complex, multi-contextual challenging, and ambiguous clinical scenarios. [34] Likewise, the capacity to judiciously appraise patient care circumstances is necessary for decision-making skills. [35]

Decision making skill is necessary to provide holistic care to their patients. [36] Decision-making is a non-technical skill which is a fundamental requirement for health professional graduates to ensure secure and proficient practice in the clinical setting. [37] Thus, clinical



decision-making is an intricate endeavor that is serious to patient safety. [38] Furthermore, it is important for nursing students because it affects patient outcomes and can influence health outcomes. [18, 35, 39] Thus, undergraduate nursing students must gain sound clinical decisions because decision-making is an essential part of the nursing practice. [8, 40]

### 3.3. Nursing Clinical Judgment

Based on the result of the systematic review, eleven (11) studies have similar studies about nursing clinical judgment. Accordingly, clinical judgment is the outcome or result of the use of decision-making in the clinical practice settings. Clinical judgment is indispensable for clinical decision making [41].

Nursing clinical judgment is a core competency that must be developed in nursing education. [42] Pre-licensure nursing students must develop their capacity to perform clinical judgment. [25] Judgments in decision-making are basic student nurse competencies used during clinical practice. The need for a shared understanding of judgment criteria is also important. [29] Clinical judgment embodies how student nurses utilize their comprehension of the patient to produce, measure, and arrange patient care discretions. [42]

Three sub-themes were identified that influence nursing students' clinical judgment. These include reflection, the learning environment and clinical teachers. [41] First sub-theme is a reflection. It is the ability to reflect on critical incidents or practice events. [43] Learning reflection is important in promoting clinical decision-making because it has a role in broadening students' knowledge and understand their beliefs and experiences. [44] Second is the learning environment. This refers to the suitable informative circumstance and a harmless psychological environment. [41] Curricular changes on nursing students' clinical learning outcomes resulted in improved clinical judgment. [24] Third sub-theme is a clinical teacher. The clinical teacher is the individual or professional who uses instructional strategies to establish clinical judgment in nursing students. [41] The need to promote student skill to employ clinical judgment in a complex, multi-contextual challenging, and ambiguous clinical scenarios is imperative. [45]

Thus, enhancing clinical judgment abilities of nursing students can help improves health care quality, and can influence health outcomes [11, 39,

41] Also, the need to develop clinical judgment in Bachelor of Science nursing students aims to deliver high-quality, competent, and considerate nursing care to patients and their families. [46]

### 4. CONCLUSION AND RECOMMENDATION

In general, the need to assist undergraduate nursing students in anticipating and exercising pre-requisite skills, clinical decision-making, and professional nursing judgment is needed in their clinical placement setting. Based on the result of the systematic review, one must elicit theoretical knowledge, technical skills, self-confidence, and self-efficacy as pre-requisite skills necessary to perform clinical decision making. Undergraduate nursing students must gain sound clinical decisions because clinical decision-making is an essential and imperative part of the nursing practice. Lastly, clinical judgment is the outcome or result of clinical decision-making skill. Under this theme, three sub-themes influence nursing students' clinical judgment. These include reflection, the learning environment and clinical teachers. Therefore, the need to assist students in anticipating and exercising decision making is needed. Also, future research is needed to gather information and research evidence approximately the importance of clinical decision-making skills to nursing students. Furthermore, the researcher advise future researcher to conduct similar study that will include other electronic database like ProQuest, EBSCO, and CINAHL to provide more detailed and comprehensive literature search.

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