

CLINICAL DECISION- MAKING IN THE NURSING PROFESSION: A REVIEW OF THE LITERATURE

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Abstract: Introduction: Professional nursing practice involves the daily use of decision-making skills. It is of fundamental importance in professional acting since its use has direct clinical-care implications for patients. Adequate decision-making skills are therefore essential, especially considering that the health care setting leaves little or no margin for error. Training in this area, with an established methodology, could have important spillovers in clinical risk management. The objective of the study is to identify the current theoretical framework of decision-making and how the professional dimension of nursing is framed within that conceptuality. **Methodology:** Systematic literature review by consulting the 5 major medical databases with search strings appropriately formulated. **Results:** Currently, internationally, decision-making is identified in three models: the systematic-positivist, or analytic, model, which theorizes a process of rational analysis of the situation in which prior knowledge is crucial; Benner's intuitive-humanistic model, based on intuition, thus neither rational nor logically defensible, grounded in prior experience; and Hammond's cognitive continuum model, which combines the previous two models and sees them not as one antithesis of the other but extremes of a continuum in which decision-making processes are positioned according to the structure of the task. **Conclusions:** There is extensive literature about decision-making models in nursing, but not all studies agree in content. Currently, considering the conceptuality theorized by Hammond, nurses tend to use both analytical and intuitive approaches on individual and environmental grounds. Experience is acknowledged to play a key role, but it can not be generalized, as there may be various types, about which, however, little literature exists.

Keywords: Decision-making, clinical nursing, critical thinking

INTRODUCTION

Professional nursing action implies the daily use of decision-making skills (literally “*decision-making*”, decision-making capacity). Decision-making does not have a unanimous definition in the literature. One of the most accepted definitions considers decision-making as a complex process, consisting of a series of deliberations based on the observation of specific situations, the evaluation of the observed data and the definition of the actions to be taken to achieve the desired results.

According to Calamandrei a problem can be defined in at least two ways. The first definition describes the problem as a difference between the actual situation and the desired ideal situation. The second sees the problem as a difficulty for which there is no ready answer in an individual's unique behavioral repertoire (Calamandrei, 2015, p. 247).

It would not be correct to say that all decisions made in organizations aim to solve problems, but it is true that solving all problems requires decision-making. Therefore, the decision-making ability is considered a fundamental aspect of the nursing professional and allows distinguishing a professional from an auxiliary operator. In fact, while the first knows how to justify his actions, having theoretical knowledge that allows him to recognize and discriminate individual situations, the second repeats known actions in routine contexts, which do not allow him to make decisions in a responsible and coherent way.

In nursing, understood as an area common to several health professions, including nursing itself, midwifery and others, decision-making is applied daily in practice (Krishnan, 2018); in this case it is defined as clinical decision making. This decision-making is of great relevance in professional practice, as its use in a precise manner has direct repercussions, at a clinical-care level, on the patients cared for by

professional nurses. National estimates assess more than 100,000 deaths per year attributable to low decision-making capacity (Kohn et al. 1999, pp. 26-48; Boyle et al., 2013).

In the health area there is a tendency to deal with common situations and problems, using standardized decision-making processes, such as protocols or guidelines, however this is often neither sufficient nor possible, as the context in which the nurse needs to make decisions it is characterized by high ambiguity and uncertainty, high stress, many variables to be discriminated, considered and interpreted; with a high risk of interpretative error. (Tanner, 2006; Calamandrei, 2015, p. 247; Nibbelink & Brewer, 2018). From this we can deduce the importance of developing adequate decision-making skills, given the healthcare context, which leaves little or no room for error. Adequate training in this area, which was already included in basic training, with a consolidated methodology could have important implications for clinical risk management, but decision-making is often placed in the background compared to other topics considered priorities or directly neglected. (Nibbelink & Brewer, 2018).

Several studies have been carried out in this area, but little is known about nurses' decision-making capacity and the theoretical and conceptual framework they use.

The objective of the study is to identify the current theoretical outline of decision-making and how the professional dimension of nursing is framed within this concept.

METHODOLOGY

Systematic literature review, consulting the databases PubMed / MEDLINE, Center for Reviews and Dissemination, Cochrane Database of Systematic Reviews, CINAHL and Google Scholar with analysis composed of key terms combined with Boolean operators.

Inclusion criteria: articles on “*decision making*” in nursing in English, Portuguese, Italian that meet international methodological requirements (PRISMA, STROBE) with a structured methodological-conceptual approach suitable for the study.

Exclusion criteria: articles about the student decision-making process; articles on decision making in other professions/disciplines; methodologically weak articles, studies in other languages.

RESULTS

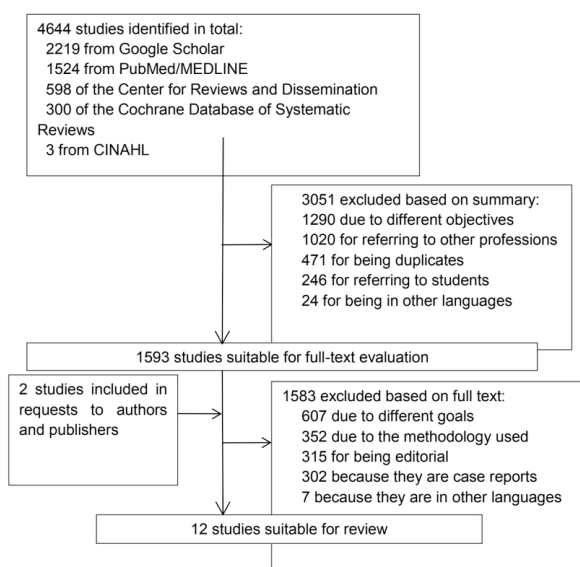


Figure 1. Flowchart of study selection according to PRISMA guidelines.

From the search using sequences of words properly constructed with Boolean operators, 4,644 articles were initially identified from 5 scientific databases: 2,219 from Google Scholar (47.8%), 1,524 from PubMed/MEDLINE (32.7%), 598 from the Center for Reviews and Dissemination (12.9%), 300 from the Cochrane Database of Systematic Reviews (6.5%), 3 from the CINAHL Database (0.1%) (Figure 1).

From the analysis of the abstracts, 3,051 were excluded (65.7% of the total studies initially considered): 1,290 because the

objective of the study was different from the analysis of the decision-making process (42.3%), 1,020 because they dealt with other professions (33.4%), 471 duplicates (15.4%), 246 because they concern students (8.1%), 24 because in other languages (0.8%). Of the remaining 1,593 studies (34.3%), 1,583 (99.4%) were excluded after full text analysis: 607 due to different objectives (38.4%), 352 due to the methodology used (22.2%), 315 for editorial reasons (19.9%), 302 because they were case reports (19.1%), 7 because in other languages (0.4%). Another 2 unavailable articles were obtained upon request from the authors. Therefore, 12 studies were included in the review, of which only 10 were among those initially identified (0.3% of the overall total).

Currently, in the international sphere, decision-making is identified in three models: the **systematic-positivist**, or analytical, model, which theorizes a process of rational analysis of the situation in which prior knowledge (semantic and episodic) is crucial; Benner's **humanistic-intuitive** model (1984), based on intuition, therefore neither rational nor logically defended, based on previous experiences: for some authors, the process and result of decision-making in this approach is the nursing diagnosis itself (Carpenito, 1983; Gordon, 1987); Hammond's model (1981) of the **cognitive continuum**, which combines the two previous models and does not see them as an antithesis of the other, but as extremes of a continuum in which decision-making processes are positioned according to the characteristics of the situation and/or problem to be resolved. Within the continuum model, various declinations of the two previous theories are defined, that is, the more ill-structured a problem is, the more it will be approached intuitively, on the other hand, a well-structured problem will be faced with a rational approach.

Elstein, in the analytical model, considers decision making to be articulated in four sequential phases (acquisition of clues, generation of hypotheses, interpretation of clues, evaluation of hypotheses) and the decision maker as having short-term memory (limited by time and capacity) and long-term memory (containing prior knowledge/experiences) in addition to the decision-maker's limitations reducing the possible hypotheses that he is able to take into account. Many studies have compared decision-making skills between novices and experts, due to the greater ease of investigating rational and easily definable elements compared to the intuitive model; discovered not only how greater experience leads to faster decision-making (although not all studies agree on this result or on what makes a decision right), but also how common problems that imply a reduced risk of complications lead to decisions with an intuitive approach, regardless of experience level. Paradoxically, with complex and unknown problems for nurses, there is a return to an analytical approach (Hammond, 1996). These results support the hypothesis that in clinical decision-making in nursing the approach is mixed, intuitive-analytical, based on criteria, whether individual or situational.

Benner, in the intuitive model (1984), formulates five stages that one must go through to acquire specialized skills (novice, advanced beginner, competent, proficient, expert); Both cognitive and analytical approaches can be used in all of these phases, so these approaches are not the prerogative of a certain level of experience. The use of one approach over another would also depend on the type of situation in which decision-making is applied. In summary, the idea persists that in decision-making we go through the initial phase of a slow and hesitant novice to a quick and decisive decision-maker, closely linking experience and knowledge and, thus, making

this model the predominant one in clinical decision-making. According to some authors, these steps do not constitute a true range of options in which the nurse or, more generally, a non-medical health professional can position themselves. These numbers would, in fact, be relegated to even lower levels and only the doctor, as a specialist figure (as long as he has his own disciplinary culture, while the nurse would above all be the technical executor of the delegated practice) can cover all levels of the *continuum*.

This way, the nurse's actions would be motivated by intuition through repeated exposure to similar situations, so that, when these were repeated, despite not being able to motivate the process in a conscious and rational way, the nurse would reach a decision with an inductive approach. /intuitive. In review, studies were identified that support this hypothesis.

In Hammond's *continuum* theory, as the number of elements to be considered in the problem increases, the time required for decision making also increases and the approach will tend to be more analytical and with a well-organized structure, while a poorly structured, difficult to decompose and, therefore, with a greater degree of uncertainty, will make the approach more intuitive, making it less time-consuming (Hammond, 1996; 2000; 2001; Hammond et al., 1987).

In the articles analyzed, the critical problems that were identified are: the non-transferability of intuitive abilities, which, as they are not rational, cannot be made explicit and, therefore, taught to others; the preponderance of intuition in environments with high situational unpredictability and an excess of variables to be considered in the decision-making process; the use of the inductive approach in decision making that motivates generalizing specific cases with theoretical concepts that can then be extended

to similar situations, however it is noted in the literature that exposure to specific situations does not allow the reconstruction of the theoretical framework necessary to generalize a theoretical construct scientific and then apply it to a series of identifiable cases.

In practice, there are few methodologically valid studies that investigate the use of *decision making* by nurses. The difficulty in investigating decision-making is due to the use of qualitative research, the difficult interpretation of the data obtained, the necessary self-analysis on the part of the subjects who respond and which can lead to the rationalization of intuitive aspects.

The first investigations date back to the 1970s, when the first measurement instruments were developed to detect the decision-making generally used by nurses, without considering the different operational realities and problem-solving skills investigated. Other tools were developed based on psychological theories. Between the end of the eighties and the beginning of the 2000s, various aspects of decision-making were investigated in different operational scenarios, obtaining conflicting results.

There seems to be a consensus that graduated nurses have greater capacity for structuring and consistency in decision-making than their colleagues with non-academic training, but while the methodology taught in basic training is solid in the medical field, in nursing it seems to be more lacking (Hamm, 1988). However, as experience progresses, this difference disappears, increasingly basing decision-making on intuition (Hamm, 1988; Hammond, 1996).

The studies considered do not reach a unanimous definition of what constitutes a correct decision (Hammond, 1996), in some cases they consider the result in terms of health, others more the effectiveness and efficiency of the solutions adopted, still others

consider all these elements in terms health from a time-dependent perspective.

Two categories of factors emerged that influenced decision-making skills: individual (age, education level, knowledge, experience, ability to formulate and modify hypotheses, communication, emotional state, personal values, ...) and environmental (complexity of the task, available time, interruptions, recognized professional autonomy, ...). The difficulty of investigation arises not only from the different approach to individual decision-making, but from the fact that the same subject, as environmental factors change, can vary their decision-making strategies. Regarding the level of experience, which the empirical view seems to play a preponderant role in the type of approach adopted, the literature is not in agreement; it can be considered that there are differences in the types of experience that favor one approach over another.

CONCLUSIONS

Decision-making plays an essential role in professional performance and allows us to distinguish a professional capable of making decisions in contexts characterized by uncertainty and ambiguity from an auxiliary operator capable only of repeating known

actions in controlled contexts. There is a vast literature on decision-making models in nursing, but not all studies agree. Currently, analyzing Hammond's theoretical approach, it is considered that nurses use both analytical and intuitive approaches according to individual and environmental criteria.

We can recognize that experience plays a primary role, but it must not be considered in a generic way, as there can be several types of knowledge, about which, however, there is little literature on the subject. The analytical approach seems to prevail in contexts of greater uncertainty, where it can be used to trace the specific event back to the best-known general models. There are few valid studies regarding the interaction of the different elements that contribute to determining the types of approach adopted by nurses, and there is no consensus on the final result of decision-making and, especially, on the strategy used. Difficulties in interpellation are due both to the inability to define what makes a decision correct and to the difficulty that nurses face in defining the type of approach they use. It is expected that the identification of new investigative methodologies can raise awareness among nurses and improve their decision-making skills.

REFERENCES

- BENNER, P. **From Novice to Expert: Excellence and Power in Clinical Nursing Practice**. Menlo Park: Addison-Wesley, 1984. 307 p.
- BJØRK, I. T.; HAMILTON, G. A. Clinical decision making of nurses working in hospital settings. **Nursing Research and Practice**, 2011:524918.
- BOYLE, P. A.; WILSON, R. S.; YU, L.; BUCHMAN, A. S.; BENNETT, D. A. Poor decision making is associated with an increased risk of mortality among community-dwelling older persons without dementia. **Neuroepidemiology**, v. 40, n. 4, p. 247-252, 2013. <https://doi.org/10.1159/000342781>.
- CALAMANDREI, C. La soluzione dei problemi e la presa di decisioni. In: ORLANDI, C. (Cur.) **Manuale di Management per le professioni sanitarie**. 4/ed. Milano: McGraw-Hill Education, 2015. p. 247-264.
- CARPENITO, L. J. **Nursing Diagnosis. Applications To Clinical Practice**. Philadelphia: Lippincott, 1983. 540 p.
- GORDON, M. **Nursing Diagnosis, Process And Application**. New York: McGraw Hill, 1987. xii, 514 p.

- HAMM, R. M. Clinical intuition and clinical analysis: expertise and the cognitive continuum. *In*: DOWIE, J.; ELSTEIN, A. (Eds.), **Professional Judgment: A Reader in Clinical Decision Making**. Cambridge: Cambridge University Press, 1988. p. 1-33.
- HAMMOND, K. R. **Principles of Organization in Intuitive and Analytical Cognition (Report 231)**. Denver: University Press of Colorado, 1981. 80 p.
- HAMMOND, K. R. **Human judgment and social policy: Irreducible uncertainty, inevitable error, unavoidable injustice**. New York: Oxford University Press, 1996. 436 p.
- HAMMOND, K. R. Coherence and correspondence theories in judgment and decision making. *In*: CONNOLLY, T.; ARKES, H. R.; HAMMOND, K. R. (Eds.), **Judgment and decision making: an interdisciplinary reader**, Cambridge: Cambridge University Press, 2000. p. 53–65.
- HAMMOND, K. R. Expansion of Egon Brunswik's psychology, 1955–1995. *In*: HAMMOND, K. R.; STEWART, T. R. (Eds.), **The essential Brunswik. Beginnings, explications, applications**. Oxford: Oxford University Press, 2001. p. 464–480.
- HAMMOND, K. R.; HAMM, R. M.; GRASSIA, J.; PEARSON, T. Direct comparison of the efficacy of intuitive and analytical cognition in expert judgment. **IEEE Transactions on Systems, Man, and Cybernetics**, v. 17, p. 753–770, 1987.
- KOHN, L. T.; CORRIGAN, J. M.; DONALDSON, M. S. **To err is human: Building a safer health system**. Washington: National Academy Press, 1999. 312 p.
- KRISHNAN, P. A philosophical analysis of clinical decision making in nursing. **Journal of Nursing Education**, v. 57, n. 2, p. 73-78, 2018.
- LAURI, S.; SALANTERÄ, S. Developing an instrument to measure and describe clinical decision making in different nursing field. **Journal of Professional Nursing**, v. 18, n. 2, p. 93-100, 2002.
- NIBBELINK, C. W.; BREWER, B. B. Decision-making in nursing practice: an integrative literature review. **Journal of Clinical Nursing**, v. 27, n. 5-6, p. 917-928, 2018.
- TANNER, C. A. Thinking like a nurse: a research-based model of clinical judgment in nursing. **Journal of Nursing Education**, v. 45, n. 6, p. 204–211, 2006. <https://doi.org/10.3928/01484834-20060601-04>.
- THOMPSON, C. A conceptual treadmill: the need for 'middle ground' in clinical decision making theory in nursing. **Journal of Advanced Nursing**, v. 30, n. 5, p. 1222-1229, 1999.