

Clinical judgment and decision-making of the Undergraduate Nursing students

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Abstract *Clinical judgment and decision-making are essential competencies in nursing, emerging as expanding learning areas of nursing education. Aiming to characterize the types of clinical judgment and decision-making adopted by nursing students in clinical education, we designed a qualitative, exploratory and descriptive study, with data collection obtained through documental analysis of nursing student's reflective journals, in clinical education settings. Data analysis was performed according to Bardin using the webQ-DA software. Thirty-four students participated in the study, while attending the Clinical Learning Curricular Unit: Caring for Clients with Increased Vulnerability and Families in Transition, producing a total of 40 reflective journals. Of the 248 identified registration units, we highlight the evaluation decision-making with 45 registration units and the intervention decision-making, with 55 registration units. It is concluded that student's reflections in the context of clinical teaching, are mainly about the assessment of the care situation and the decision-making related to the action. This study is intended to guide the learning of these competencies in nursing education.*

Key words *Students, Nursing, Clinical training, Decision making, Qualitative study, Education, Nursing*

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Introduction

The increase in the clients' acute conditions, the reduction in the hospital length of stay and the constant advances in technology require nurses to make decisions, from an evidence-based perspective of practice, about the care to be provided. Clinical decision-making skills portray a complex mental process in which data are collected, interpreted and evaluated to select the most appropriate action, supported by scientific evidence^{1,2}. Clinical judgment, as a global assessment of the care situation, is understood as the observed result of decision-making². Clinical judgment and decision-making competencies are recognized internationally as being crucial^{3,4} for nursing practice and reflect an expected standard of university graduates in Portugal^{1,5}. Thus, nursing education has been responsible for developing the capacity of nurses to make good clinical judgment and make appropriate clinical decisions⁶. The initial nursing training aims to allow the students to acquire specific knowledge and skills so they can make clinical judgments and make effective decisions in clinical practice^{2,7,8}.

At Escola Superior de Enfermagem de Lisboa (ESEL), the Study Program (called Curso de Licenciatura em Enfermagem [CLE]) predicts a four-year course to attain a degree in Nursing: the first two years comprising theoretical and theoretical-practical teaching and the remaining two years of Clinical Teaching (CT). Considering that judgment and decision-making are more influenced by the nurses' background than objective data about the care situation⁹, ESEL has developed educational strategies to enable the student to acquire these competencies. The Study Plan includes a curricular unit (CU) called Decision-Making Process in Nursing (PTDE, *Processo de Tomada de Decisão em Enfermagem*), which focuses on the development of clinical judgment and decision-making, among others, and the CTs whose learning outcomes comprise the training of the student for clinical judgment and decision-making in a real-life context¹⁰.

The CT is a privileged time to learn these competencies¹¹⁻¹³. Clinical teaching involves a process of construction of professional knowledge, set in a certain context, in which the student has the theoretical knowledge as references in relation to the experience of skilled professionals who guide them¹¹ and the reflection on

their experiences in practical clinical situations¹². In this context, nursing students must be taught and practice how to make accurate and safe clinical judgments, as well as to make decisions about the care situation in which they are involved⁸.

Providing students with structures in which they can reason and reflect on this reasoning, clinical judgments and decision-making can promote the identification and correction of cognitive errors to maintain client safety⁸. Aiming to maximize this reflective learning¹⁴, one of the pedagogical methods used is the creation of the reflective journal. It is a written document that allows the student to acquire competencies in nursing, experiential learning and learning about themselves, enhancing their learning skills through reflection¹⁵. When faced with complex situations, reflection allows the student to differentiate between several factors that influence it and make a clinical judgement, a decision or draw up an action plan¹⁶.

When providing care, given the uniqueness of the situation, the nursing student must learn the appropriate time to act, in order to know how to decide on the current care situation. This judgment and decision-making constitute competencies that are developed throughout the initial nursing training and continue during the professional training process. The focus on this thematic represents a significant area in international research^{1,6,14,17-20}, albeit with little impact at the national level^{4,21,22}. This is why the UC PTDE pedagogical team has reflected on the mobilized contents and the pedagogical strategies used to make the learning process of clinical judgment and decision-making an effective one throughout the initial nursing training.

The CT in the final year of the course covers several complex healthcare environments to provide learning opportunities and prepare the student for the professional context^{12,15}, in which they will soon take part. Hence, this study was carried out aiming at characterizing the types of clinical judgment and decision-making of nursing students attending the 4th year of clinical education in order to outline pedagogical strategies to facilitate their competence development. The following research question guided the research: "What is the typology of clinical judgment and decision-making that nursing students attending the 4th year of the CLE used in the learning activities developed in the context of clinical teaching?"

Methods

The present research constitutes a qualitative, exploratory and descriptive study, which includes a comprehensive knowledge format, highlighting interpretation as a key feature in the investigation. The recommended protocol for qualitative research SRQR (Standards for Reporting Qualitative Research) was used²³.

The qualitative research plays an important role in ensuring a subjective perspective of the stories narrated by different social actors²⁴, widely used in health professions, and specifically in nursing^{15,25}. In an attempt to characterize the typology of the nursing student's decision-making, data collection was carried out through the documental analysis of reflective journals prepared by senior-year nursing students in clinical education. The present study was supported by an investigation carried out in 2010, with participants in a similar clinical context and using the same theoretical framework of analysis⁴, so that similarities and differences in the findings could be identified²⁵. The team of researchers consisted of three faculty professors from the PTDE CU.

The study participants comprised 4th-year students of CLE attending the clinical CU 'Caring for Clients with Increased Vulnerability and Families in Transition (ECCCVAFT)', in the academic year of 2020-2021, taking place between January 4th and April 23rd, 2021. This clinical teaching CU encompasses three different learning contexts: mental health and psychiatry; other vulnerabilities; and elderly in the community. The reflective journal was one of the documents to be prepared by students in this clinical teaching CU, in different contexts²⁶. The reflective journals were collected between January 18th and March 13th, 2021, through the blackboard platform, validating the authenticity of this type of documental information²⁷.

The selection criterion for the students was to be attending the CCVAFT CU. As exclusion criteria: not having prepared a reflective journal in the context and having written a reflective journal without reporting on clinical judgment and decision-making in nursing. A total of 39 students agreed to participate in the study. Of the 35 students who created a reflective journal, two students were excluded because their reflective journals did not answer the research question. The predominant gender was female (90.9%)

and age ranged from 21 to 33 years, with a mean of 22.24 years. The sample corresponds to 12.2% of students enrolled²⁷ in the CCVAFT CT. The sample aimed to meet the sufficiency criterion, through the inclusion and reflection of the variability of the three contexts of clinical teaching and of the learning experiences, as well as the theoretical saturation through student representativeness in the different contexts.

Reflective journals created in professional practice situations constituted a narrative source of investigation, due to the fact that they comprise an important documentation on nursing learning^{15,28}. These were carried out by the students according to the requests of specific guiding documents²⁶, a reflection on an experienced situation of care that was relevant to their learning, therefore without suffering any influence from the team of researchers²⁹. The reflective journals presented a structured reflection according to the six stages of Gibbs cycle: description of the situation; experienced feelings; assessment of positive and negative aspects; analysis of the actions taken; conclusion about what could have been done differently; and planning of a future action in response to the reflection process, according to the guiding document provided by the coordination teams of ECCCVAFT CU²⁶. The assessment of the teacher in charge of clinical teaching was not included so as not to bias the student's narrative in the first person about their experiences²⁴.

The 'discreet' information from these personal documents²⁴ gave voice to the thoughts and feelings of nursing students about situations of clinical judgment and decision-making experienced in the context of care²⁵. The analysis content comprised the perspectives of students in the care process and not about the care itself²⁹.

Data analysis was carried out through content analysis, using a thematic approach, and followed three stages, according to Bardin³⁰. In the first, the corpus was constructed, that is, the selection of the analysis documents taking into account the representativeness, exhaustiveness, homogeneity and relevance of the reflective journals in relation to the study object³⁰. Thus, the corpus of the analysis comprised 40 reflective journals produced by the 33 students participating in the study. Then, the text was separated into thematic units, with previous categories, which expressed the underlying idea in each one of them, and the coding was carried out based on Record Units

(RU). Finally, the categorization and measurement of frequencies was carried out, focusing on the type of RU, which was performed using the WebQdA software³¹. Although the qualitative analysis program is a facilitating strategy, it requires human codification³². For this reason, the analysis was independently carried out by two investigators and later a new triangulation was performed by the third member of the investigation team³³. Aiming to guarantee the rigor of the study, the methodological procedures were permanently monitored throughout the study and self-correction strategies were used, such as the redefinition of the inclusion and exclusion criteria, by the researchers^{34,35}.

This study is part of an investigation on the learning of decision-making in the care process, in a clinical context, and was approved by the Research Ethics Committee of ESEL. The clinical teaching management team as well as the teaching staff were informed, so they could feel involved and involve the students. The students were recruited by sending a request through the blackboard platform, requesting access to their reflective journals for the purposes of this investigation. The request included an explanation of the study to be carried out, ensuring confidentiality, anonymity and guaranteeing the absence of coercion and harmful consequences. The students who agreed to participate in the study sent their informed consent by email. Throughout the entire investigation process, the students' names were removed from the reflective journals and identified by an "E" (student) plus a number following the order in which the informed consents were received. That was complemented with the characterization of the gender using the letters F (Female) and M (Male).

Results

The analysis of the typology of clinical judgment and decision-making that students narrated in their journals was supported by the categorization developed by Thompson et al.²⁰ (Chart 1). The authors describe four types of clinical judgment (cause/diagnosis, descriptive, evaluative and predictive) and six types of decision-making (intervention; targeting; timing; communication; management; and understanding), which were used in the analysis of the reflective journals.

Based on the performed analysis, of the 248 registration units identified, the clinical judgment typology achieved 106. With greater repre-

sentativeness, the *evaluative judgment* showed 45 registration units, followed very closely by the *descriptive judgment* with 43 registration units. The *cause/diagnosis judgment* reached 15 registration units, and finally the *predictive judgment* had one registration unit (Table 1).

The *evaluative judgment* subcategory seems to be represented by the judgment on the change in the client's status, which the students report:

Almost immediately, they started having episodes of self-harm, slapping their own face and/or banging their hands and legs on the bed rails (E1F).

After this occurrence, Mr. D. started to show a tense posture of difficult contact and more appellative and inappropriate behavior, refusing to perform their personal hygiene (E30F).

Regarding the *descriptive judgment* subcategory, the students suggest a judgment about the condition of the person receiving their care, supported by the observed data: *M.R. was sitting on the bathroom floor, crying and mutilating her forearms with the cap of her water bottle (E4F). The lady had a neat and tidy appearance, with no apparent physical injuries (E18F).*

The *cause/diagnosis judgment* seems to emerge in the students' speech as the explanation of a nursing problem based on the collected data:

She had motor deficits that made it impossible for her to carry out her daily activities independently (E3M).

I realized that he was not totally unconscious during the surgery and that he heard the surgical team giving their opinion about the clinical condition of his urethra and bladder and that they were not so good. That scared him and left him in this condition (E21M).

The findings on the *Predictive Judgment* suggest the student's judgment about a likely situation in relation to the client they were caring for:

... it was important to control humidity and protect the bony prominences, as well as to prevent fissures from appearing. (E22F)

Regarding the decision-making typology, with a total of 142 registration units, the *intervention decision* showed the highest frequency, with 55 registration units, followed by the *understanding decision*, with 39 registration units, the *communication decision*, with 33 registration units, the *management decision*, with 11 registration units, and finally, *timing and targeting decision*, with three and one registration units, respectively (Table 2).

In the *intervention decision-making* subcategory, the students seem to describe how they decide to intervene by identifying the risk for them and for the client:

I returned to room C., where I put on the necessary PPE (Personal Protective Equipment) and started to aspirate Mr. J.'s secretions through the tracheostomy (E19F).

I took the client in a wheelchair to the foot of the bed, where it was safer and where she could hold herself in case something happened (E21M).

Decision-making also seems to emerge as an intervention option according to the results they hope to achieve: *I approached C. and just touched their shoulder, I did not say anything* (E1F).

Regarding the *understanding decision* subcategory, the students' narratives suggest an interpretation of the care process that leads them to decide:

Given the patient's growing state of anxiety and disquiet regarding this situation, my nurse and

I respected their decision at that time (E11F).

I spent a few minutes talking to her about what brought her here, how she felt and a little bit about her family, which was effective in calming the lady down (E31F).

Regarding the *communication decision* subcategory, in the selection of information to be transmitted to clients and their families and healthcare team, the students seem to facilitate the cooperation and interaction between them:

I also adopted the reformulation technique, in order to clarify and facilitate the understanding, as well as the clarification technique, in an attempt to clarify what was previously said (E24F).

[...] it was explained to the husband that we did that, so that the pain could be alleviated (E14F).

Chart 1. Types of decisions, according to Thompson *et al.*²⁰

Type of judgment or decision	Definition
Judgment (cause/diagnosis)	A statement that expresses a state or condition based on the presence of signs that are used to explain a problem
Judgment (descriptive)	A statement that expresses a state or condition based on the presence of signs that were directly observed or obtained from another source
Judgment (evaluative)	A statement that expresses a qualitative difference in a state or condition based on the presence of signs that were directly observed or obtained from another source
Judgment (predictive)	A statement that expresses an expected situation about the unfolding of a state or condition based on the presence of signs that were directly observed or obtained from another source
Decision (intervention)	Select among interventions
Decision (targeting)	Select which user will benefit most from the nursing intervention
Decision (timing)	Select the best time to intervene
Decision (communication)	Select which information to collect and transmit to users, family members and nursing staff
Decision (management)	Define or process the transfer of care
Decision (understanding)	Interpret signs in the care process

Source: Translated and adapted from Thompson *et al.*²⁰

Table 1. Category of clinical judgment typology of nursing students, according to Thompson *et al.*²⁰

Category of clinical judgment typology	Frequency per subcategory	Frequency per category
Judgment (cause/diagnosis)	15	106
Judgment (descriptive)	43	
Judgment (evaluative)	45	
Judgment (predictive)	3	

Source: Translated and adapted from Thompson *et al.*²⁰

Table 2. Category of decision-making typology of nursing students, according to Thompson *et al.*²⁰

Category of clinical judgment typology	Frequency per subcategory	Frequency per category
Decision (intervention)	55	142
Decision (targeting)	1	
Decision (timing)	3	
Decision (communication)	33	
Decision (management)	11	
Decision (understanding)	39	

Source: Translated and adapted from Thompson *et al.*²⁰

[...] we informed the doctor who was present about the episode and the baby's condition (E23F).

In the *management decision* subcategory, the continuity of care seems to underlie the definition of their transfer and the articulation between the health teams:

[...] considering the symptoms they have presented, for a better management of these symptoms, we proposed that an assessment be made by the palliative care team, previously discussed with the family doctor (E32F).

The care transfer process also suggests being present among nursing students, as a way to ensure its continuity: *I asked a nursing student who was also there to discreetly keep an eye on M.R* (E4F).

The results of the *timing decision* subcategory suggest a decision based on the selection of the best time to intervene:

The man was not the only one for whom I was responsible, so I had to manage the time to provide the best care within my capabilities to all clients (E5F).

The *targeting decision* seems to imply a nursing intervention centered on the person receiving care:

I tried to be impartial and carry out my tasks thoroughly, meeting the needs of my other clients, always maintaining their safety and quality of care (E6F).

Discussion

Nursing is intended to have a role in solving people's problems, in different contexts, ranging from the community to the hospital. For this purpose, nurses must be capable of making decisions about the care to be provided based on data interpretation and selection of the best course of action⁹. In this sense, nursing students must learn to make clinical judgments and make decisions independently and autonomously⁸, in which situation the clinical teaching is assumed as a dialogic reflection on what they see and what they feel, in a methodology of learning to be a nurse by doing it^{7,11}. In ECCCVAFCT, nursing students seem to perform more evaluative and descriptive clinical judgments and make more decisions related to acting, the understanding of the care situation and communication with the client.

In the Evaluative Judgment, students seem to favor situations in which there are changes in the client's condition, which require mobilization of knowledge and previous experiences, and also

the existing research, because that is how they see the need to intervene and the type of decision³⁶.

For this reason, the descriptive judgment may not be so relevant, because the student wants to reflect on their decision-making in the sense of providing specific nursing care and they might not have experienced it yet^{20,37}.

As for the *cause/diagnosis judgment*, students seem to interpret the data obtained in order to make a statement that corresponds to a client's problem²⁰.

Regarding the *predictive judgment*, the student seems to make a prediction of an imminent result that corresponds to a judgment on new data obtained²⁰. This fact requires an acceptable proficiency of care situations due to its complexity³⁸, which is why it would have been less significant for the student.

In the students' narratives, the *intervention decision* emerged with greater prominence where the student conceives hypotheses in view of the different options for solving the problem and selects those appropriate to the situation and context^{21,22}. Decision-making seems to depend on the situation they have to face, in seeking to meet the individual needs of clients^{19,20}. Compared to the study by Marques⁴, the decision to intervene came in third place as reported by the students.

The *understanding decision* also remarkably emerges in the way the students made decisions. The reflection process that subsidizes nursing education, both regarding the theoretical and practical components, seems to have allowed students to analyze their reasoning process during client care and, at the same time, make them aware of this reflective process⁷. In analogy to the study that supports it⁴, metacognition was maintained as a crucial element in decision-making, contributing to the understanding of the care process¹⁷. The reasoning methods involved in the critical analysis and interpretation of data seem to have contributed to the 'reading' of the client, the events and the established relationships⁹.

Distinctively, the *communication decision* still emerged when confronted with the other types of decision-making by the students. The decision on what to communicate and which communication strategies to use with the client and family in an attempt to involve them in the decision process³ seems to be present in the students' discourse. The underlying knowledge that guides communication⁸, as well as the development of communication skills with the nursing team, leads the student to confidently communicate^{3,15} with other professionals in an attempt

to involve them in the decision-making process. Regarding the results presented by Marques⁴, the selection of what to communicate to the client and their family and to the nursing team was the most frequently reported decision. Currently, the challenge that the pandemic has brought us regarding the level of interpersonal relationships in the context of care, with the use of personal protective equipment and the maintenance of social distancing, may have implications will this have on the way students interact with the clients and their families³⁹.

The *management decision*, with less representation than the previous ones, is associated with the process of organization and management of care by the nursing students. Its decision process suggests the use of resources, such as their peers and other health professionals, in the articulation of care^{3,20}. One of the aspects to be highlighted was the lack of references in this category in the previous study⁴. Did the PTDE CU allow students to feel more confident in the way they made decisions¹⁹, making them feel prepared to decide on the organization and articulation of care to ensure its continuity?

The students scarcely referred to the *timing decision*, that is, the selection of the best time to intervene²⁰. In the adequacy and prioritization of care, students suggest demonstrating clinical reasoning that allows effective decision-making according to the understanding of the clinical situation¹⁷. This reference showed a similar result to that of the previous study⁴, being second to last in the developed analysis. Are the students adequately prepared during their training for this type of decision^{19,40}?

The lower relevance among the types of decisions that the students made was the *targeting decision*. The student seems to decide on the intervention to be carried out in search of the greatest benefit for the client²⁰, implying knowledge of the client, either by the way they often react to care situations, or as a person⁹. Also in the study by Marques⁴, deciding which client would benefit the most from the nursing intervention came last. Students learn to focus on the care to be provided according to the clinical context they experience⁷. Considering the adverse situations that the pandemic brought to health institutions, how were the students able to make decisions based on the individual needs of their clients¹⁹?

The process of learning about decision-making in CT is regulated through two essential elements: the clinical learning environment^{7,9,12,13,18} and clinical supervision^{11,19,39,41}. It is important to

analyze the changes that the pandemic situation has caused in terms of health and nursing education, specifically, due to the reduction in CT time, changes in clinical supervision and changes in contexts, among others. What consequences will these factors have on the development of student decision-making competencies? These should be investigated. On the other hand, the experience of single experiences in CT by the students provides them with the development of decision-making and their own empowerment³⁹.

Final considerations

Clinical judgment and decision-making in clinical teaching that emerge from the students' reports suggest the appreciation of evaluative and descriptive judgment, as well as the decision to act, followed by the understanding of the care situation and communication with the client. The cause/diagnosis and predictive judgments show a lower impact, as well as the management decision-making to ensure continuity of care, timing in choosing the best time to act and targeting, that is, the selection of the intervention that shows the greatest benefit to the client. Learning clinical judgment and decision-making induces the nursing student to acquire and develop global knowledge and competencies, reinforcing judgment and decision-making skills in clinical practice, contributing to the practice of excellence.

The qualitative methodology through the interpretation, comparison and synthesis of the 'reading' of the narratives that the reflective journals represented, allowed a characterization of the clinical judgment and decision-making of the nursing student. This methodological approach allowed an interpretation of the types of judgment and decision, due to the description, explanation and understanding as a non-mathematical process of interpretation.

As a consequence in terms of training, the characterization of the several types of clinical judgment and decision-making of the nursing student allows the teaching team at PTDE CU to reflect and assess the contents and pedagogical methodologies aiming to enhance the development of all types of clinical judgment and decision-making of students in their academic path. We intend to disseminate the results obtained in this investigation to the academic community in order to promote other pedagogical strategies that promote the development of clinical judgment and decision-making by students.

At the research level, this study characterized the type of clinical judgment and decision-making of nursing students participating in CT. However, and taking into account the methodology used, these results cannot be extrapolated. This study could be supported by the triangulation of data collection techniques, such as interviews or focus groups. Another limitation is that the devel-

opment of the reflective journals does not intend to portray this investigation; however, the depth of the documents allowed us to constitute a corpus whose analysis answers the research question and the objective of the study. Simultaneously, the results and limitations of this investigation open up other areas of study on the clinical judgment and decision-making of nursing students.

Collaborations

FM Marques, MJ Pinheiro and PV Alves: study design and article preparation; analysis and interpretation of data; writing of the manuscript; review of versions and critical review of content.

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