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## DOCTORAL THISIS ABSTRACT

### RESEARCH ON THE IMPLEMENTATION OF THE NURSING PROCESS IN CLINICAL PRACTICE IN ROMANIA

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# **CURRENT STATE OF KNOWLEDGE**

## **Chapter I.**

### **I.1. Nursing Theories and Models**

#### **I.1.1. The Importance of Theory in Nursing**

It is unanimously accepted that nursing theories underpin the structure and organization of specific nursing knowledge and facilitate systematic data collection, with the aim of describing, explaining, and anticipating nursing practice. Applying theories promotes a rational and systematic approach. They guide nursing practice not only towards the practical act itself but also towards achieving specific objectives. Moreover, theories clarify nursing as a discipline and define its purpose, distinguishing it from other disciplines that deal with patient care, by establishing clear professional boundaries (1). Thus, the theories aim to understand the specific phenomena of nursing and are the pillars that guide practice and research in this field. They are essential for the continuous evolution of the discipline (2, 3).

#### **I.1.2. Issues Related to Theory Development**

Various issues related to the application of nursing theories have been highlighted in the specialized literature. These refer to the use of specific nursing theories versus those taken from other fields, to the metaparadigm in nursing, and to the significance of the care concept in this context (4).

While all nursing theories incorporate concepts and theories taken from other fields that influence the evolution of theory, research, and practice, their mere adoption does not automatically transform them into nursing concepts or theories. Thus, nursing theories, as well as borrowed concepts, must be reinterpreted and adapted according to the nursing perspective (4-8).

#### **I.1.3. The Importance of Theory in Clinical Practice**

Nursing theories provide nurses with a perspective through which to interpret the patient's situation and a framework for organizing daily care. They help the nurse focus on essential information, eliminating the irrelevant ones. Moreover, they provide direction in analyzing and interpreting data, setting the necessary objectives in the care plan. By adopting a theoretical perspective, nurses can plan and implement care

intentionally and proactively, thus becoming more efficient and having more effective communication. (2).

#### **I.1.4. Selecting Nursing Theories for Practice**

One of the major issues in selecting a theory for practice is whether only a single theory should be used. By choosing just one theory, it can limit data collection so that only aspects specific to that theory are observed. Knowing multiple theories offers advantages, allowing for the selection of the nursing theory or model that best fits a particular situation (8).

Thus, the following criteria are proposed, formulated as a checklist:

- type of health institution where care is provided
- origin of the nursing theory
- paradigms as a basis for choice
- degree of complexity
- patient's needs
- clarity of the theory (5).

#### **I.2. The Nursing Process – Latest Revision**

The nursing process is considered to be the most influential change in the approach to nursing care(9). Today, it is unanimously accepted that this process represents the method by which the nurse's activity is organized (10-13).

It is flexible, adaptable, but at the same time structured enough to provide a foundation through which all nursing actions can be carried out (14).

##### **I.2.1. Evolution of the Nursing Process**

In 1967, Yura and Walsh published the first work on the nursing process, describing four stages: assessment, planning, implementation, and evaluation (15). Subsequent studies led to modifications of the nursing process stages, expanding them from four to five: initial nursing assessment (evaluation), nursing diagnosis, planning, implementation, and evaluation (12, 15).

The advanced nursing process (*Advanced Nursing Process*) is an extended version of the traditional nursing process, which has recently emerged. It addresses the relationship between the stages of nursing based on scientific evidence and includes standardized and validated concepts(16, 17).

Although the nursing process is frequently reviewed and reevaluated, its fundamental concepts remain essential for nursing practice (12).

## **I.2.2. Phases of the Nursing Process**

### **I.2.2.1. Initial Nursing Assessment (Assessment)**

Assessment is the first stage of the nursing process, being the phase in which information about the patient is collected. It is the most important stage of the process, as all other stages depend on the quality of the initial assessment and the specific one. It is essential to evaluate all dimensions of the human being, including the physical, psycho-social, socio-cultural, developmental, and spiritual aspects (11, 18).

### **I.2.2.2. Nursing Diagnosis**

Establishing the diagnosis is a critical stage in the nursing process and depends on an initial assessment of the patient, which must be objective and complete. This forms the basis of the nursing plans and constitutes the final product of the initial assessment stage (10).

One of the most important advantages of using nursing diagnoses is that they provide the patient with individualized care, allowing them to be informed and actively participate in their own care process. This aspect has contributed to improving communication between the patient and the nurse. When used correctly, it becomes a tool that guarantees personalized care for patients, allowing the nurse to effectively manage their health issues (11, 12).

### **I.2.2.3. Planning**

Planning involves developing an action plan aimed at finding solutions for addressing nursing diagnoses and assisting the patient in achieving optimal health goals (14).

#### **I.2.2.3.1. Objectives (expected outcomes) and Interventions**

In the planning process, objectives (expected outcomes) are identified, and nursing interventions are chosen to address the nursing diagnoses. Also, the priority order of the diagnoses is determined. The most urgent and critical diagnoses receive the highest priority (10, 18, 19).



The objectives are derived from the nursing diagnoses and must be specific, measurable, include a well-defined time frame, and be individualized for the patient (10, 11, 19). Each objective results from a single nursing diagnosis (20).

The interventions are directly related to the nursing diagnosis: if the objectives come from the first part of the diagnosis (the patient's problem), the interventions derive from the second part (the cause of the problem or linking factors). They must also comply with quality standards in care (15, 19, 21).

#### **I.2.2.3.2. Types of Nursing Plans**

Currently, alongside the classic nursing plans, standardized nursing plans are also being implemented. Electronic versions of the plans are gaining ground in nursing care documentation. In this context, the multidisciplinary care plan (collaborative plans, critical pathways) represents a standardized format that highlights care standards for patients (22, 23).

The adoption of the Patient's Electronic Health Record (EHR) offers a great opportunity to expand knowledge about nursing practice by introducing nursing data into the EHRs (24, 25).

Nursing plans, whether electronic or on paper, which are structured using standardized nursing language (SNL), are considered essential to provide a complete picture of the patient's health status (13, 26-29).

#### **I.2.2.4. Implementation**

Implementation is the stage in which the care plan is put into practice by the nurse. This involves carrying out nursing interventions, delegating responsibilities to care team members under the coordination of the nurse, and recording relevant data (20).

The final step of implementation involves meticulous, clear, and concise documentation of newly emerged information and patient responses. This can reflect progress or stagnation within the established objectives (11, 18).

#### **I.2.2.5. Evaluation**

Evaluation is the stage where the effectiveness of the nursing plan is examined, constituting the final phase of the nursing process. Often, in practice, this stage is the most neglected. During the evaluation, new problems that arise in the patient are

analyzed, and it is decided whether the care plan needs revision or can be concluded (11, 18).

Although the nursing process is often described as a series of consecutive stages, in reality, the nurse can return to previous stages or advance to the next ones as the patient's condition changes (19, 30).

### **I.2.3. Collaborative Issues**

Some of the patient care issues are defined as collaborative problems because they require, first and foremost, a diagnostic and therapeutic process of medical competence. Collaborative problems arise from the risk of complications within a condition, treatment, or investigation (31, 32).

### **I.2.4. Advanced Nursing Process**

The *Advanced Nursing Process* represents a distinct form of the “traditional” nursing process. It includes validated initial assessment tools and scientifically grounded concepts related to nursing diagnoses, objectives, and interventions(16).

The standardized nursing language (SNL) consists of sets of terminologies designed and used by nurses to describe nursing care. The terminologies that best meet the criteria for validity and reliability, according to the specialized literature, are the NANDA-International Nursing Diagnoses Classification (NANDA-I), the Nursing Interventions Classification (NIC), and the Nursing Outcomes Classification (NOC). These three classifications are interconnected and are known as the NANDA-I, NIC, and NOC taxonomies (the NNN system). The implementation of the NNN system is based on clinical reasoning (16, 17). The *Advanced Nursing Process* is also developed based on this system (16).

## **Chapter II.**

### **II.1. Nursing Diagnosis – Essential Element in Evidence-Based and Individualized Nursing Care Planning**

In specialized literature, the term 'diagnosis' is used to refer to the second stage of the nursing process, to the reasoning applied in interpreting data obtained from the initial assessment, but also to a formal statement about the patient's health status, which includes both the care problem and its etiology. Moreover, the term is used in the context of lists containing standardized terms (diagnostic titles), which are useful in formulating diagnoses. These terms most often represent care problems, and to formulate a complete diagnosis, the etiology must be added (32).

The nursing diagnosis is the central element in elaborating the nursing plan; therefore, its accuracy is essential (10, 30, 32).

#### **II.1.1. Formulation of Diagnosis**

According to specialized literature, a complete nursing diagnosis should include at least the human response (reaction), which is the care problem, and an indicator of the factors contributing to this response. A correctly formulated diagnosis meets two lines of reasoning: the first aims to identify a problem, thus suggesting what needs to be changed, and the second involves identifying the cause, indicating what needs to be done to achieve the desired change (33).

#### **II.1.2. Avoiding Diagnostic Errors**

One of the biggest mistakes in formulating a nursing diagnosis is creating a diagnosis that cannot be addressed through nursing interventions. Mistakes can also occur when the steps of the nursing process are not followed, either through a superficial initial assessment or by using inaccurate data (11, 30).

Potential diagnostic errors can be identified during the initial assessment, grouping of data, and formation of diagnostic hypotheses. To correctly identify the diagnosis, it is important to keep in mind that it should refer to the patient's health problem, correlated with etiology (possible causes), and should always refer to the patient's issue, not those providing care (nurses or other professional categories in the care team) (31).

### **II.1.3. Difference Between Nursing Diagnosis and Medical Diagnosis**

The term 'diagnosis' is not exclusively used in medicine. It is also used by teachers to identify learning problems, by nurses to diagnose nursing problems, in the auto-mechanic industry for diagnosing car malfunctions, as well as in other fields. Recognizing this is important to avoid confusion (10).

The nursing diagnosis aims to develop an individualized nursing plan based on the patient's response to a health problem, while the medical one seeks to identify and structure a therapeutic plan for treating the patient's condition (31).

The nursing diagnosis may also involve the patient's family or group, as they can influence expected outcomes. Unlike the medical diagnosis, which focuses solely on the patient (34).

Formulating the nursing diagnosis is not based solely on the medical diagnosis. Patients with the same medical diagnosis may present different nursing diagnoses because each individual reacts (responds) differently to the action of the same stressor (32).

### **II.2. Advantages of Using Standardized Nursing Diagnosis in Practice**

The implementation of standardized nursing diagnosis in clinical practice brings multiple benefits. The nursing diagnosis contributes to the uniform collection of information in clinical practice, in various health institutions and patient groups (35). Improving communication between nurses (36) and increasing patient safety through continuous care (37) are other advantages of using nursing diagnoses. Moreover, they have been shown to be associated with patient outcomes in hospitals. For example, some studies suggest that the number of standardized nursing diagnoses influences the patient's length of stay (38), affects the hospital mortality rate (39) și and reduces medication-related costs (40).

### **II.3. Nursing Diagnosis and Electronic Health Records**

In the past, patient data recording was based on paper documents, but today digital documents are gaining ground due to the advantages they offer, becoming a standard and norm in health services (41). A fundamental transformation in the concept of documenting patient information is represented by the ability of informatic systems to compile all of a patient's data into a single document. The development of the Electronic Health Record (EHR) can be considered the most significant change in

documenting patient information since their recording began. The global trend towards adopting the EHRs is evident and will undoubtedly persist (41, 42).

The implementation of standardized nursing language (SNL) has become an essential condition in developing care plans in electronic format, being fundamental for developing a nursing database within the EHR (43).

# PERSONAL CONTRIBUTION

## Chapter III.

### III.1. Study 1 – Comparative Analysis of Three Major Nursing Theories Relevant to Clinical Practice

#### III.1.1. Purpose

The purpose of this study is to describe and analyze the relationships between the hypotheses and concepts of the adaptation model developed by Roy (RAM), Orem's self-care deficit theory (SCDNT), and Virginia Henderson's model.

#### III.1.2. Objectives

The general objective is to identify the usefulness of major nursing theories in clinical practice.

The specific objectives of the study aimed at comparing the theories and identifying similarities and differences in relation to: (I) the philosophical foundations of the theory; (II) the relationship with the nursing metaparadigm; (III) the utility of the theory, (IV) testability (V) parsimony, and (VI) the value of the theory in the development of the nursing discipline.

#### III.1.3. Materials and Methods

This study is of a descriptive type.

In the analysis conducted in this study, the evaluation criteria developed by McEwen were used, which correspond to those described by Fawcett and DeSanto-Madeya (44). These criteria are also promoted by Walker and Avant (45) in the analysis and evaluation of nursing theories and include the following aspects:

- philosophical foundations of the theory;
- major assumptions of the theory;
- concepts and relationships;
- utility of the theory;
- testability;
- parsimony;
- the value of the theory in the development of the nursing discipline (4).

### **III.1.4. Description of Models/Theories – Relationships Between Concepts and Key Assumptions**

#### *Orem's Self-Care Deficit Theory (SCDNT)*

Orem's theory has been modified over time to align with the concept of the individual and the nursing system, but the original theory has largely remained untouched. SCDNT is presented as a general nursing theory that encompasses three sub-theories (3, 4). The three "nested" theories delineated by Orem are as follows: the theory of self-care, the self-care deficit, and the nursing system (2, 46).

To understand Orem's theory, six major concepts are essential, namely: self-care, self-care ability, therapeutic self-care requisites, self-care deficit, nursing ability, and the nursing system (8).

#### *Roy's Adaptation Model (RAM)*

The foundational concept of the model pertains to an individual's adaptation as a response to stimuli. There are three types of stimuli: focal or direct, contextual, and residual. The individual continuously interacts with these stimuli, eliciting a response from them, resulting in adaptation. The response can either be adaptive or ineffective. The goal of nursing is to support the individual's adaptation effort by managing the surrounding environment. The outcome of this endeavor is achieving an optimal health level for the person (3).

RAM focuses on the interdependence of four adaptive modes. These constitute specific categories and are used as a conceptual framework in the initial evaluation phase (assessment) within the nursing process. These adaptation modalities are termed as follows: the physiologic/physical mode, self-concept/group identity, role function, and interdependence (4).

The primary concepts pertain to individuals and groups viewed as adaptive systems, the environment, health, and nursing care objectives. Among these concepts, the most essential are adaptation, focal or direct stimuli, residual stimuli, the cognitive subsystem, and the regulatory subsystem (4, 47).

*Virginia Henderson's Care Model*

The primary assumption of the model is that the nurse cares for the patient until the patients can take care of themselves again. Henderson believes that the patient desires to regain health, although this is not explicitly stated in her theory. She also assumes that the nurse is devoted to the patient throughout this period. Another fundamental belief of Henderson is that nursing education at the university level should embrace both the art and science of the profession (4, 48). Henderson felt that the nurse has a unique role in assisting the individual, whether sick or well, in performing activities that contribute to the maintenance or restoration of health (48).

**III.1.5. Results - Comparative Analysis of Henderson's Model, Roy's Adaptation Model, and Orem's Self-Care Deficit Theory**

*Philosophical foundations of the theory*

Orem	Henderson	Roy
<ul style="list-style-type: none"> <li>• She argued that no theorist represented the basis for his theory</li> <li>• Parsons' theory of social action structure and Bertalanffy's systems theory</li> </ul>	<ul style="list-style-type: none"> <li>• The American psychologist Thorndike</li> </ul>	<ul style="list-style-type: none"> <li>• Johnson's model</li> <li>• Concepts from Helson's adaptation theory</li> <li>• von Bertalanffy's system model</li> <li>• Rapoport's system definition.</li> <li>• Dohrenrend and Selye's adaptation and stress theory</li> </ul>

*The relationship with the nursing metaparadigm (person, health, environment, nursing)*

Orem	Henderson	Roy
<ul style="list-style-type: none"> <li>• Refers to each concept of the nursing metaparadigm</li> </ul>	<ul style="list-style-type: none"> <li>• The major concepts are in relation to the nursing metaparadigm, though not all are clearly defined</li> </ul>	<ul style="list-style-type: none"> <li>• Establishes an interdependent relationship between the concepts of the nursing metaparadigm with the concept of a person's adaptation to stimuli</li> </ul>



<ul style="list-style-type: none"> <li>• The environment - is vaguely defined</li> </ul>	<ul style="list-style-type: none"> <li>• Person – is the only concept clearly defined, the rest are inferred</li> </ul>	<ul style="list-style-type: none"> <li>• Clearly defines all the concepts of the metaparadigm</li> </ul>
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*Utility*

Orem	Henderson	Roy
<ul style="list-style-type: none"> <li>• Considered more useful in clinical practice than in research</li> <li>• In clinical practice - community care, intensive therapy, obstetrics and neonatology, medical and surgical specialties, pediatrics, dialysis services</li> </ul>	<ul style="list-style-type: none"> <li>• Profoundly influenced nursing education through the clearly expressed view of the nurse's role</li> <li>• Was used to create the dependency scale by measuring human needs</li> </ul>	<ul style="list-style-type: none"> <li>• The complexity and its constant updating according to societal changes remains a starting point for both research and practice</li> <li>• In research - it underpins the development of middle-range theories</li> </ul>

*Testability*

Orem	Henderson	Roy
<ul style="list-style-type: none"> <li>• Elements of the theory have been tested in research studies</li> <li>• Many researches related to the self-care deficit theory are descriptive research</li> <li>• The theory has not been fully subjected to research</li> </ul>	<ul style="list-style-type: none"> <li>• Testable in practice and can also be a basis for research</li> </ul>	<ul style="list-style-type: none"> <li>• It is testable. The Boston Based Adaptation Research in Nursing Society has shown that since the 1970s, 163 studies have used the adaptation model as a basis for their research</li> </ul>

*Parsimony*

Orem	Henderson	Roy
<ul style="list-style-type: none"> <li>• Orem's theory is complex, encompassing four theories nested within each other in a "nest" form</li> <li>• Its complexity has increased with each published edition in response to the needs of society, which is why it is accessible</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced in presentation, but complex in its purpose</li> <li>• The reduced degree of model presentation makes it more accessible compared to other theories</li> </ul>	<ul style="list-style-type: none"> <li>• It is not accessible due to the large number of elements, systems, structures, and concepts.</li> <li>• Complete and comprehensive, it attempts to explain the patient's real situation so that nursing interventions are specifically selected.</li> </ul>

*The value in the development of the nursing discipline*

Orem	Henderson	Roy
<ul style="list-style-type: none"> <li>• Presented a vision of nursing education and practice expressed through a general theory</li> <li>• It is perceived as a realistic reflection of nursing practice</li> <li>• It has greatly expanded the horizon of nursing research through its complex approach, updating the theory over time to meet the current needs of society, and originality</li> </ul>	<ul style="list-style-type: none"> <li>• Had a major influence in education</li> <li>• By elaborating the definition of the discipline and the first school curriculum based on patient issues rather than the elaborated model</li> </ul>	<ul style="list-style-type: none"> <li>• Provides directions for quality nursing care through a holistic approach to patient needs and clearly defines the nursing process</li> <li>• It greatly expanded the research horizon in nursing due to its complex approach, updating the theory over time to meet the current needs of society and originality.</li> </ul>

### **III.1.6. Discussions**

The analysis of the three theories based on the established criteria shows that each model or theory has its own strengths and limitations, and their effectiveness can vary depending on the specific context and requirements. Also, it is possible for practitioners to combine elements from different theories to develop approaches that are most suitable for the individual needs of their patients.

### **III.1.7. Conclusions**

The theories and models analyzed provide uniqueness and value to the discipline, having applicability in clinical practice. They provide nurses with a perspective through which they can understand the patient, thus organizing their daily activity for his care. Moreover, collecting data using nursing theories allows nurses to focus on nursing-relevant information and separate it from irrelevant ones.

### **III.1.8. Recommendations**

The nursing theories analyzed in this study can serve as a valuable example for use in clinical practice, especially in countries like Romania, where patient care is predominantly organized based on the biomedical model.

## **Chapter IV.**

### **IV.1. Study 2 – Training Nurses in Using Nursing Diagnoses in Clinical Practice and Its Influence on Intentions, Attitudes, and Behaviors**

#### **IV.1.1.Purpose**

The purpose of the study is to evaluate the influence of nurses training related to nursing diagnosis (ND) on their intention, attitudes, and behavior.

#### **IV.1.2.Objectives**

The general objective of the study is to identify the training of nurses related to nursing diagnosis and its influence on their intention, attitudes, and behavior.

Specific objectives:

- Identify the influence of nurses training on nursing diagnosis on their intention, attitudes, and behavior regarding its use in clinical practice;
- Determine the differences between intention, attitudes, and behavior considering socio-demographic and professional characteristics;
- Describe the profile of the nurses and their training related to nursing diagnosis.

#### **IV.1.3.Materials and Methods**

The assessment of the intention, attitudes, and behavior of the nurses was conducted through a cross-sectional, descriptive study, using a survey conducted through online questionnaires.

#### **Sample/participants**

For this study, a non-probabilistic, intentional, multi-stage sampling method was adopted. In the first stage, the hospitals were selected, and in the second stage, the participating nurses were selected. In stage I, the selection of the hospitals took into account the diversity of the development regions, in order to reduce, as much as possible, the selection bias.

Initially, eight hospitals were invited, but three of them declined or did not respond to the invitation. Thus, the study included five hospitals, from different development regions and of different categories.

The inclusion criteria targeted:

- Hospitals that have implemented nursing documents.

- Nurses who work directly at the patient's bedside and where nursing plans are implemented

- Nurses with managerial roles

Exclusion criteria:

- Nurses who do not provide direct care at the patient's bedside.

### **Data Collection**

Data collection took place between March 15, 2022, and July 15, 2022, using an online questionnaire (Google Forms) distributed to the participating hospitals located in different regions of Romania. The questionnaire was distributed to the nurses by the care directors of each participating hospital.

### **Measurement instrument**

The questionnaire used in this study was based on one used in a previous study conducted in Italy and Spain, developed based on scales crafted by a group of Italian researchers.

The questionnaire included the following sections:

- Sociodemographic data (age and gender) and professional details (basic professional education, postgraduate training, professional experience, current position)

- Training on nursing diagnosis included familiarization with the diagnosis, education about the diagnosis, and self-training

- Intention Scale: contains a single item that measures the nurses' intention to use the nursing diagnosis in daily practice

- Attitude Scale: a 9-item scale was used that employs a semantic differential method to assess the nurses' attitudes towards nursing diagnoses

- Behavior Scale: this contains a single item to evaluate the actual behavior of nurses regarding the use of the nursing diagnosis in practice, measuring the frequency with which the diagnosis is used in clinical practice.

### **IV.1.4.Results**

The total number of questionnaires collected from the 5 participating hospitals was 664, all with complete data.

The **socio-demographic and professional characteristics** indicate that the majority of participants are women (91.7%) with an average age of  $43.53 \pm 7.99$ . On

average, participants have a professional experience of about 17 years ( $16.52 \pm 8.86$ ), and less than 10% (9.2%) hold managerial positions.

Regarding the education level of the respondents, the majority are nurses with secondary education ( $n = 454$ ; 68.4%), and over a quarter ( $n = 184$ ; 27.7%) are nurses with higher education. Less than 15% of the total sample ( $n = 73$ ; 10.9%) have postgraduate education, and only one respondent (0.1%) has completed a doctoral study program.

### **Training of nurses for the use of nursing diagnosis**

More than half of the respondents, 424 (63.9%), are familiar with Nursing Diagnosis (ND) and use it in clinical practice, while over a quarter of the nurses (32.7%) do not apply the knowledge in practice. Only 3.5% stated that they do not possess knowledge about DN. Regarding education on ND, more than half (64.9%) received training that also included DN. Nurses who had ND-focused education and those who did not receive DN-based education account for 14.5% and 20.5%, respectively. Regarding other alternative answers to this item, a single participant replied that the education received was not enough ("education was provided, but not adequately"). Half of the sample did not train about DN, and more than a quarter (26.6%) trained a maximum of 3 hours/month.

### **Intention, attitudes, and behavior**

As Figure IV.1 shows, the results indicated that more than half of the respondents (63.3%) were in favor of using ND in clinical practice, while 16.3% were against its implementation. A significant percentage of respondents (20.5%) remained undecided.

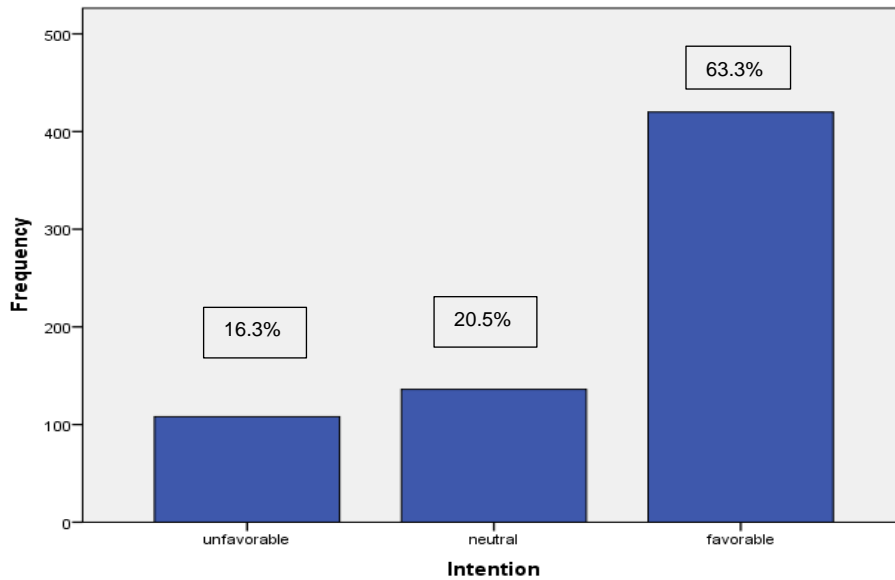


Figure IV.1. Intention to use nursing diagnoses

The attitude of nurses towards Nursing Diagnosis (ND) was measured on a scale from 0 to 10, with an overall average of  $6.39 \pm 3.03$ . For each item on the attitude scale, the means and standard deviations were as follows: useless/useful ( $6.72 \pm 3.19$ ); disadvantage/advantage ( $6.74 \pm 3.14$ ); difficult/easy ( $6.10 \pm 3.05$ ); unpleasant/pleasant ( $6.14 \pm 3.13$ ); a obstacle/a help ( $6.41 \pm 3.32$ ); uncomfortable/comfortable ( $6.16 \pm 3.17$ ); does not bring professional satisfaction/brings professional satisfaction ( $6.28 \pm 3.36$ ); unimportant/important ( $6.48 \pm 3.25$ ); irrelevant/relevant ( $6.52 \pm 3.27$ ) (see Figure IV.2).

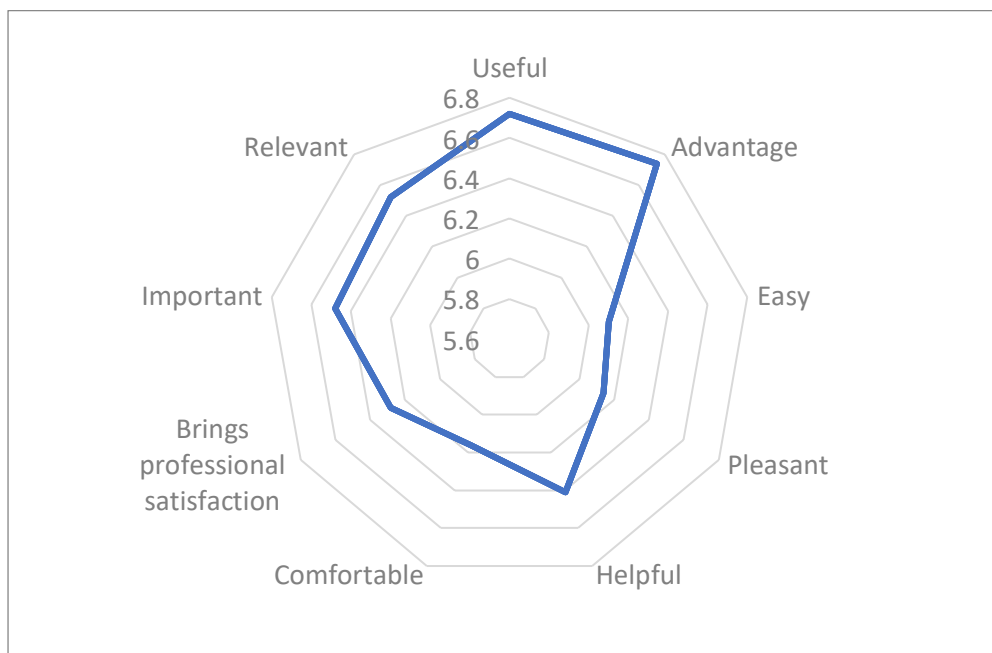


Figure IV.2. Attitudes of nurses towards nursing diagnosis

Regarding behavior, the majority of respondents, (63.0%), stated that they use ND only occasionally, while just over 10% have not used it at all. In contrast, nearly a quarter of nurses (24.7%) claimed that they consistently use ND in their daily practice (see Figure IV.3).

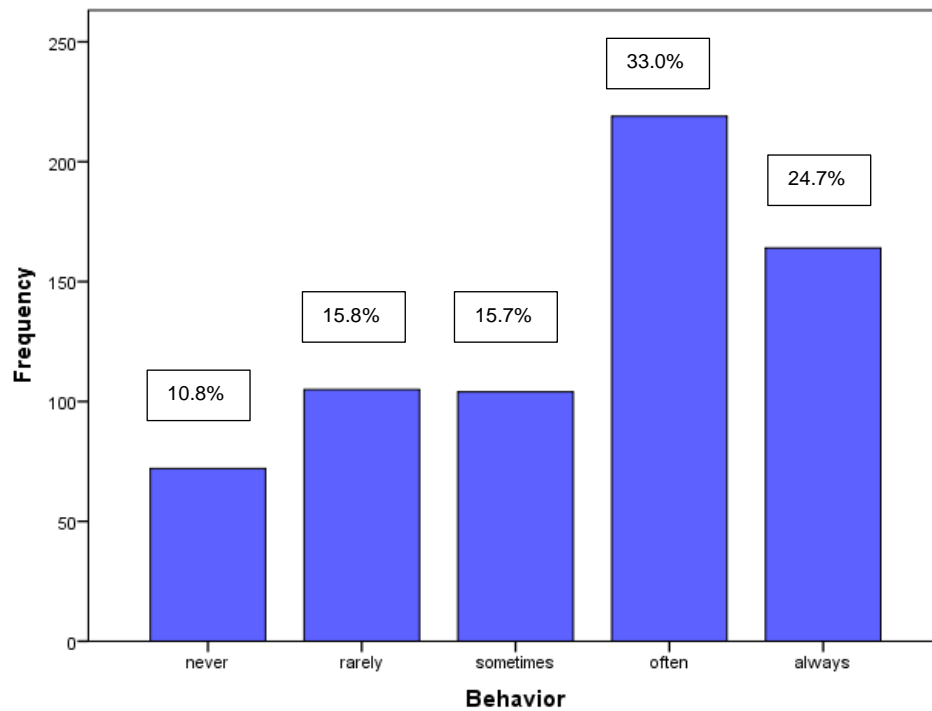


Figure IV.4. Behavior of nurses related to the use of nursing diagnosis

Inferential statistical analysis tests highlighted significant correlations between intention, attitude, and behavior. The Spearman rho correlation coefficient showed strong positive and statistically significant associations between the nurses' intention to use the nursing diagnosis and attitude ( $r = 0.796$ ,  $p < 0.01$ ), weak positive and statistically significant associations between intention and behavior ( $r = 0.296$ ,  $p < 0.01$ ), and moderately positive and statistically significant associations between attitude and behavior ( $r = 0.345$ ,  $p < 0.01$ ).

### **The training of nurses for the use of nursing diagnosis and their intention, attitudes, and behavior**

To identify the associations between the training of nurses and intention, attitudes, and behavior, various inferential statistical analysis tests were conducted. Specifically, one-way ANOVA tests were conducted between groups to examine the



relationship between the level of familiarity of nurses with the nursing diagnosis (independent variable) and their intention to use the nursing diagnosis (dependent variable). The results showed a significant difference ( $F(2,64.04) = 20.47, p < 0.0001$ ). Moreover, the application of the ANOVA test to assess the relationship between the education received by the nurses regarding the nursing diagnosis (DN) as an independent variable, and their intention to use it in daily practice as a dependent variable, showed a statistically significant difference ( $F(2,126.35) = 23.99, p < 0.0001$ ).

Regarding the exploration of the relationship between the level of familiarity of the nurses with the nursing diagnosis (DN) as an independent variable and their behavior in using it as a dependent variable, the one-way ANOVA test, between groups, showed a statistically significant difference ( $F(2,83.96) = 263.04, p < 0.0001$ ).

In examining the relationship between the education received by the nurses regarding the nursing diagnosis (DN) as an independent variable and their behavior in using it in daily practice as a dependent variable, a statistically significant difference was found  $F(2,167.69) = 29.53, p < 0.0001$ .

For all ANOVA test, post-hoc tests (Games-Howell) were applied which showed significant differences between groups. The differences between the groups included in the education variable are presented in Figure IV.5.

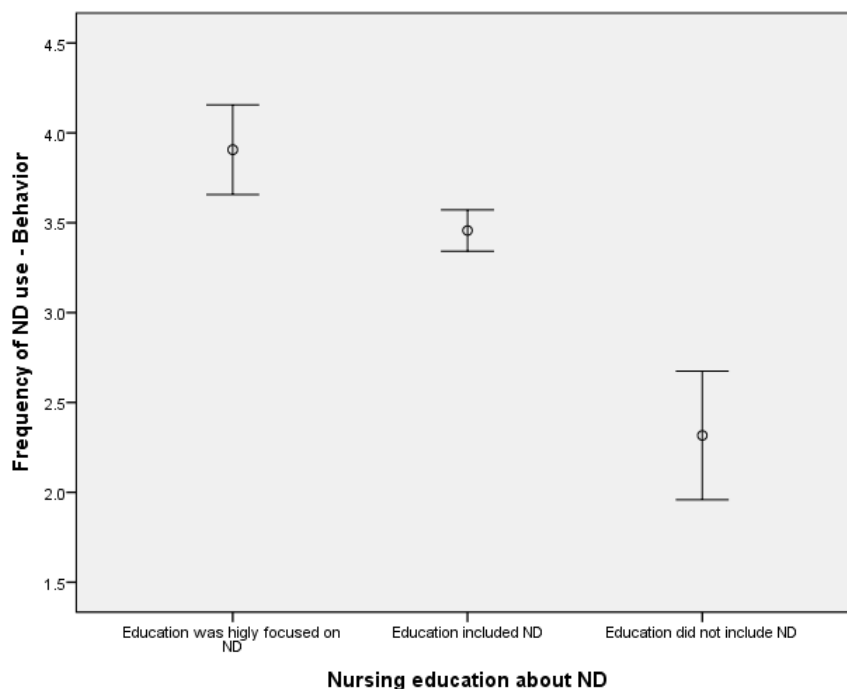


Figure IV.5. Comparison between education about DN and behavior  
 Note: original scale: 1-5

Additionally, the Kruskal-Wallis test showed a statistically significant difference between the attitudes of nurses from the three categories defined by the degree of familiarity with DN ( $\chi^2(2, N = 664) = 57.87, p < 0.0001$ ). In analyzing the last variable, self-training, through which we assessed the training level of the nurses, a weak, positive, and statistically significant correlation was observed between the nurses' behavior using DN and self-training related to DN (Spearman correlation coefficient  $r = 0.126, p < 0.01$ ).

### **Socio-demographic, professional characteristics, and intention, attitudes, and behavior**

In analyzing the professional variable, the current position held, statistically significant results were obtained in comparison with intention and attitudes. The independent T-test indicated significant differences ( $t(83,86) = -4.49, p < 0.0001$ ) between variables, with an average for nurses with managerial functions ( $M = 8.16, SD = 2.32$ ) higher than that of nurses without managerial functions ( $M = 6.71, SD = 3.13$ ).

Also, the Mann-Whitney U test revealed that the averages related to the attitudes of nurses with managerial functions were significantly higher compared to those of nurses without managerial functions ( $Md = 8.33, n = 603$ ) ( $Md = 7.00, n = 61$ ),  $U = 12697.50, z = -3.99, p < 0.0001$ , with a significant effect ( $r = -0.0006$ ).

No statistically significant results were obtained regarding the relationships between intention, attitudes, behavior, and age, professional experience, and basic education in the profession.

#### **IV.1.5. Discussions and Limitations**

The main result of this study was the identification of the profile of nurses in Romania regarding their training on ND (nursing diagnosis), in relation to their intention to use ND in clinical practice, as well as their attitudes and behavior in this regard.

Regarding the education about ND within the nursing educational programs, the results highlighted that a significant proportion of nurses benefited from information regarding ND. However, over 20% of participants did not receive any information related to this topic during their formal nursing education.

The results of the current study showed that nurses in Romania have slightly positive attitudes towards ND, which confirms the findings of other studies that

explored the attitudes of nurses (49-51). Furthermore, our study revealed that the greater the intention and attitudes are, the higher is the tendency of nurses (behavior) to use ND. This observation is also supported by a cluster analysis study that compared populations from Spain and Italy (52).

Regarding the comparison of the training of nurses on ND and their intention, attitudes, and behavior, the results were significant for all three variables analyzed. The findings suggest that training is an essential component for the successful implementation of ND in clinical practice. This aspect is also emphasized in other studies (53),(54),(55).

In terms of the socio-demographic and professional characteristics of nurses, the position held is a variable worth discussing. The intention and attitudes of nurses with managerial functions to use the nursing diagnosis are significantly higher than those of nurses without managerial roles. However, in terms of behavior, no statistically significant differences were found. This could suggest that the intention and attitude of management nurses are influenced, on the one hand, by the fact that implementation is mandatory according to current legislation, and on the other hand, that they do not work directly with ND, only applying the rules of current legislation.

#### **IV.1.6.Conclusions**

The results of this study highlight that training related to ND (nursing diagnosis) is a factor that influences the intention, attitudes, and behavior of nurses to use it in daily practice.

Additionally, the study indicates that nurses in Romania show an intention, attitudes, and behavior slightly positive towards ND, but training programs are needed for its successful implementation in clinical practice. There is also a notable interest on the part of the nurses to enhance their knowledge about ND, and nurses with managerial roles support the implementation of ND in practice.

The implementation of the nursing process, including the nursing diagnosis, in clinical practice, is in its early stages in Romania. However, new regulations regarding standards for hospital accreditation create favorable premises for the successful implementation of the nursing process in practice.

Managers and educators should provide nurses with training programs designed to promote updated knowledge about ND, including standardized nursing language. It

is also recommended to conduct additional studies to determine the efficiency and impact of implementing nursing diagnosis in Romanian hospitals.

## **Chapter V.**

### **V.1. Study 3 – Quality of Nursing Diagnoses, Interventions, and Outcomes in Nursing Documentation in a University Hospital in Romania Evaluated with Q-DIO: A Cross-Sectional Study**

#### **V.1.1. Purpose**

The purpose of this study is to evaluate the quality of the nursing process, as reflected in the nursing documents in a hospital in Romania.

#### **V.1.2. Objectives**

The general objective is to analyze the nursing files from a hospital in Romania, using an internationally validated measurement instrument.

The specific objectives of the study aimed at: (I) assessing the level of completion and the accuracy of the standardized nursing language, recorded in the initial nursing evaluation and nursing diagnoses; (II) measuring the effectiveness of nursing interventions; (III) evaluating the quality of the outcomes obtained for the patient; and (IV) determining the relationships between the five phases of the nursing process.

#### **V.1.3. Materials and Methods**

The evaluation of the nursing process, as applied in the nursing documentation, was carried out through a cross-sectional, descriptive, and retrospective study.

The study took place in a public, university hospital located in the central region of Romania. At this hospital, the nursing files are in physical format, not electronic, having a uniform format in all departments of the hospital.

##### **Data Collection**

Data was collected from the nursing files of patients admitted in the year 2021, which are located in the department of archiving of medical documents.

Sample determination was done using a probabilistic sampling technique, and the study included 395 nursing files. These were selected from a total of 14,498 nursing files belonging to patients admitted to the hospital during 2021, who had a minimum of 4 days of hospitalization. The sample size was determined based on Taro Yamane's formula, considering a sampling error of 5%. To ensure the representativeness of the sample, a proportionate stratified random sampling strategy was used.

Inclusion criteria for the document analysis were: (I) nursing files recorded in all hospital specialties where care is provided based on nursing plans; (II) nursing files that had at least 4 days of hospitalization. The number of hospitalization days was established considering that a complete initial nursing assessment is carried out within a maximum of 48 hours and based on the interval set for evaluation in other similar studies (17, 56).

Exclusion criteria required the removal from the study of departments where the nursing process was not implemented (Anesthesia and Intensive Care department and the Emergency Reception unit) and documents where patients only had one, two, or three days of hospitalization.

### **Measurement Instrument**

The analysis of the nursing process applied by nurses in nursing documents was carried out using a standardized measurement tool validated internationally called: "The Quality of Diagnoses, Interventions, and Outcomes" (Q-DIO). The items of the Q-DIO instrument measure both quantitative (e.g., degree of completion) and qualitative aspects (e.g., accuracy, correctness, significance) of the nursing process.

The tool includes 29 items grouped into 4 sub-concepts, corresponding to the stages of the nursing process (57, 58).

The first sub-concept, titled "Nursing Diagnosis as a Process," contains items related to the initial nursing assessment (11 items).

The second sub-concept, called "Nursing Diagnosis as a Product," contains 8 items that identify the accuracy of the nursing diagnosis, expressed through the PES formula (problem, etiology, signs, and symptoms), and checks if the diagnosis matches the NANDA-I diagnoses.

The third sub-concept, named "Nursing Interventions," contains 3 items and analyzes whether the interventions are correlated with the etiology of nursing diagnoses and if the evaluation of planned interventions has been made.

The last sub-concept, "Nursing-Sensitive Patient Outcomes," contains 7 items and evaluates the outcomes of nursing care and the relationship between the achieved outcomes and interventions.

### V.1.4. Results

The total number of nursing files evaluated was 395. Out of these, 157 (39.7%) did not contain any information about the nursing process. Therefore, the final dataset included 238 cases.

#### *Nursing Diagnosis as Process (Nursing Assessment)*

This section presents the results of the analysis of the first sub-concept of Q-DIO - "Nursing Diagnosis as a Process". Out of all the 238 cases, one did not have any information regarding the items measuring this sub-concept and was therefore excluded from the analysis.

Out of the 237 files investigated, 125 of them contained relevant information for this item. On the other hand, the item referring to contact persons (q9) was completed in all cases, with only one exception, totaling 236 files. Thus, completion rates for the items of this scale ranged between 52.7% and 99.6% (Figure V.1).

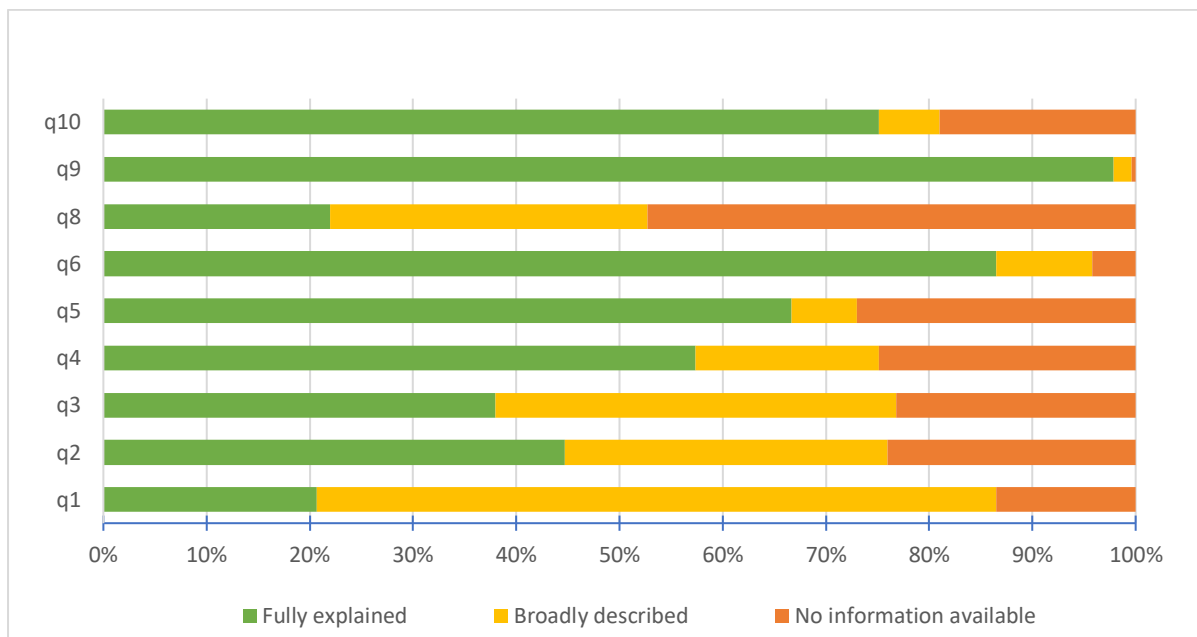


Fig. V.1 Completion level of nursing documentation - Nursing Diagnosis as Process (%)

Note: q1: Actual situation, leading to the hospitalization; q2: Anxiety and worries related to hospitalization, expectation and desired about hospitalization; q3: Social situation and living environment/circumstances; q4: Coping in the actual situation/with the illness; q5: Beliefs and attitudes about life (related to the hospitalization); q6: Information of the patient and relatives/significant others about the situation; q8: Hobbies, activities for leisure time; q9: Significant others (contact persons); q10: Activities of daily living.

#### *Nursing Diagnoses as Product*

This section presents the results of the analysis of the sub-concept "Nursing Diagnoses as a Product". Out of the 238 files examined, 171 (71.8%) did not contain any information related to this sub-concept. None of the remaining 67 documents

achieved the maximum score concerning the full inclusion of information for the items of this sub-concept. In this set of 67 files, 16 of them had no information related to the items q14 to q19.

Of the eight (8) items included in this sub-concept, six items (q14 - q19) had the lowest completion rates. Out of the 238 files analyzed, only 51 contained relevant information for these elements. In contrast, the items related to the formulation of nursing diagnoses (q12 and q13) were completed in more than a quarter of the documents. Thus, completion rates for the items in this scale ranged between 21.4% and 27.7% (Figure V.2).

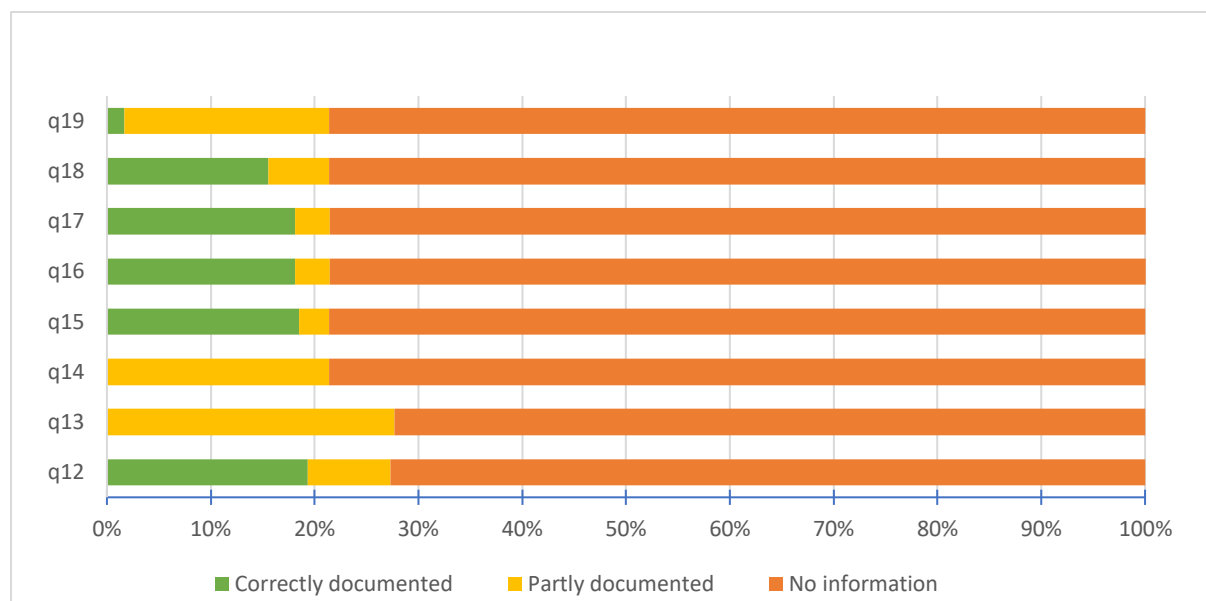


Fig. V.2 Completion level of nursing documentation - Nursing Diagnosis as Product (%)

Note: q12 - The nursing problem/nursing diagnosis label is documented; q13 - The nursing diagnosis label is formulated according to NANDA-I and numbered; q14 - The etiology (E) is documented; q15 - The etiology (E) is correct, related/corresponding to the nursing diagnosis (P); q16 - Signs and symptoms are formulated; q17 - The signs and symptoms (S) are correctly related with the nursing diagnosis (P); q18 - The nursing goal relates/corresponds to the nursing diagnosis; q19 - The nursing goal is achievable through nursing interventions.

### *Nursing Interventions*

This section presents the results of the analysis of the sub-concept "Nursing Interventions." Partial information related to the items of this sub-concept was recorded in 199 (83.6%) out of the 238 files examined.

Regarding the level of completeness of the information related to the items that make up this sub-concept, none of the 199 documents reached the maximum score.

Of the three (3) items included in this sub-concept, item q21, which refers to the impact of nursing interventions on the etiology of nursing diagnoses, had the lowest completion rate. Out of the 238 files examined, only 51 contained relevant information for this item. On the other hand, items related to planned nursing interventions (q20)



and documentation of performed nursing interventions (q22) were completed in over four-fifths (4/5) of the documents. Therefore, the completion rates for the items of this scale ranged between 21.4% and 83.6% (Figure V.3).

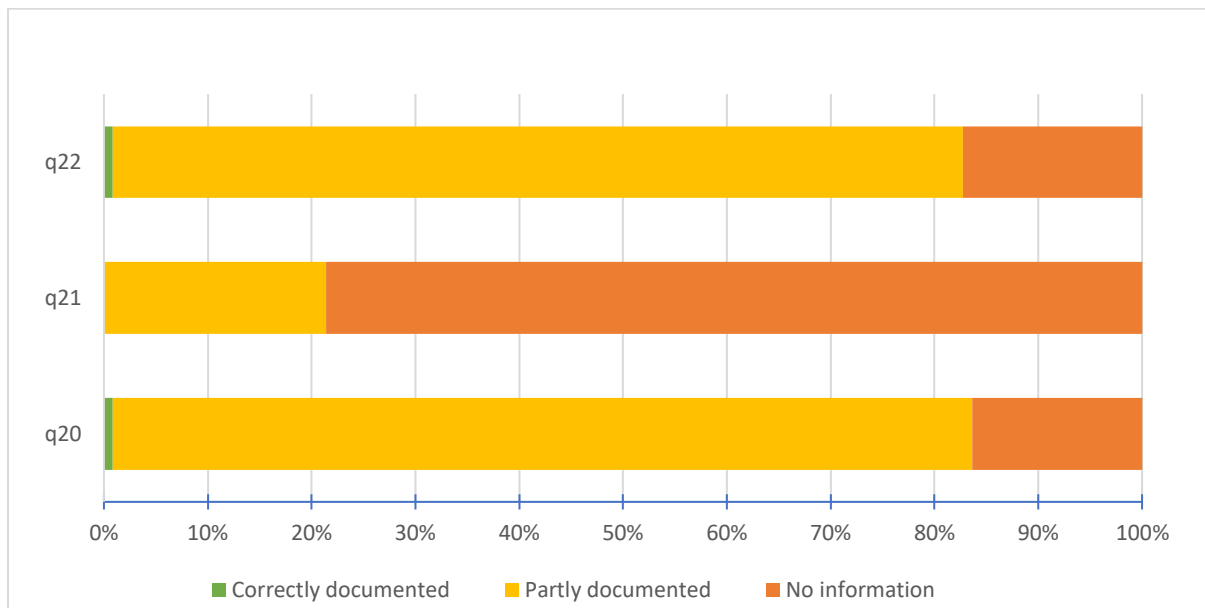


Fig. V.3. Completion level of nursing documentation - Nursing Interventions (%)

Note: q20 - Concrete, clearly named nursing interventions according to NIC are planned (what will be done, how, how often, who does it); q21 - The nursing interventions effects the aetiology of the nursing diagnosis; q22 - Nursing interventions carried out, are documented (what was done, how, how often, who did it).

### *Nursing-Sensitive Patient Outcomes*

The pattern observed for the second sub-concept is also evident for the items measuring this last sub-concept of Q-DIO. The examination of the 238 files revealed that 183 (76.9%) had no information available to be assessed regarding the elements of this sub-concept. Moreover, the evaluation of nursing diagnoses (their reevaluation at 4-day intervals) and their reformulation where necessary (q23 and q24) was not carried out in any file.

Of the remaining five (5) items within this sub-concept, the items examining the relationship between the outcomes obtained in the patient and the nursing interventions (q28) and the interrelationship between outcomes and the nursing diagnosis (q29) had the lowest completion rate. Only 14 of the 238 files analyzed contained relevant information for these items. Conversely, items related to documenting nursing outcomes (q25) and the method of documenting outcomes (q26) were completed in almost a quarter of the documents. Thus, completion rates for items on this scale ranged between 5.9% and 23.3%, as can be seen in Figure V.4.

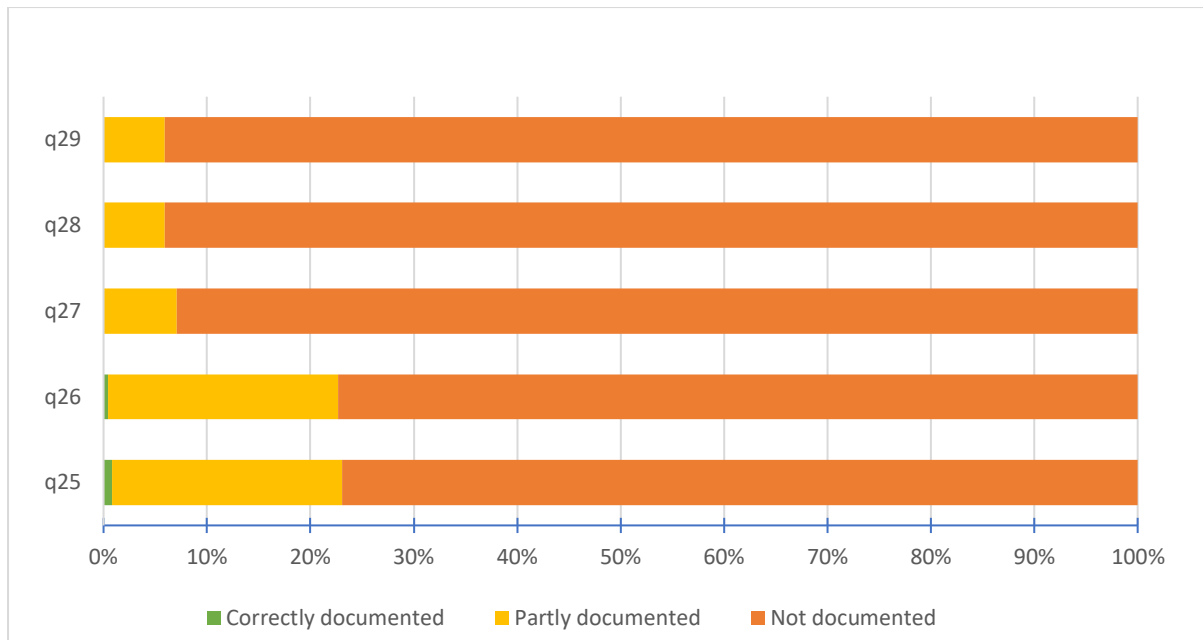


Fig. V.4. Completion level of nursing files – Nursing-Sensitive Patient Outcomes (%)

Note: q25 - The nursing outcome is documented; q26 - The nursing outcome is observably/measurably documented according to NOC; q27 - The nursing outcome shows: - Improvement in patient's symptoms; - Improvement of patient's knowledge state; - Improvement of the patient's coping strategies; - Improved self-care abilities; - Improvement in functional status; q28 - There is a relationship between nursing-sensitive patient outcomes and nursing interventions; q29 - Nursing outcomes and nursing diagnoses are internally related.

#### *Interrelations between Q-DIO sub-concepts*

When comparing the mean values of each sub-concept, significant differences between them were highlighted regarding the level of information. The sub-concepts "Nursing Diagnostics as Process" and "Nursing Interventions" displayed a considerably higher completion level compared to "Nursing Diagnosis as Product" and "Nursing-Sensitive Patient Outcomes". Additionally, the last sub-concept contains significantly less information compared to "Nursing Diagnosis as Product". Furthermore, to explore the relationship between the sub-concepts, interrelations between these indices were calculated. The results showed positive correlations between each of the Q-DIO sub-concepts, according to the data presented in Table V.1.

Table V.1. Results on the validity and reliability of Q-DIO sub-concepts (N = 238).

Q-DIO sub-concepts	(I) Nursing Diagnoses as Process	(II) Nursing Diagnoses as Product	(III) Nursing Interventions	(IV) Nursing-Sensitive Outcomes	Cronbach's alpha
(I) Nursing Diagnoses as Process	1.000				0.87
(II) Nursing Diagnoses as Product	.086	1.000			0.98
(III) Nursing Interventions	.212***	.748***	1.000		0.74
(IV) Nursing-Sensitive Outcomes	.265***	.262***	0.369***	1.000	0.91

Note: \*\*\* The Rho Spearman correlation was significant at the 0.01 level.

The reliability of the sub-scales was evaluated using Cronbach's alpha coefficient. The resulting values range between 0.74 and 0.98, suggesting a reliability from moderate to high. Convergent validity was examined by calculating the correlation coefficient between the instrument's sub-scales, using Spearman's coefficient (rs). These correlations show positive trends, demonstrating consistent relationships between all the sub-scales of the Q-DIO instrument. Correlation coefficients are significant at  $p < 0.001$ , except for the correlation between "Nursing Diagnostics as a Process" and "Nursing Diagnostics as a Product" (see Table V.1).

#### V.1.5. Discussions and Limitations

The present study is the first study addressing this subject in Romania, offering new perspectives from nursing practice and a benchmark dataset for further analyses related to care provision in the Romanian context. Some results of this study were also published in the form of an article(59).

The results of our study showed that over 60% of the analyzed files contained nursing information in a structured format that included the five phases of the nursing process as recommended in the literature (20). However, when the nursing process was evaluated with Q-DIO, this aspect was not confirmed. Furthermore, out of all the Q-DIO sub-concepts, "Nursing Diagnostics as a Process" displayed a good level concerning the coverage of evaluated information. The sub-concept "Nursing Interventions" revealed that the majority of interventions were planned and documented after their execution.

However, the overall analysis of the nursing documents highlighted a relatively low level both in terms of the degree of document completion and the quality of the information contained. Thus, even though nurses collected data, they did not use it in formulating diagnoses. Consequently, the majority of the formulated diagnoses turned out to be incorrect and did not contain defining characteristics and linking factors. Moreover, the planned interventions did not address the etiology of the diagnosis, and therefore were not effective. The analysis of the last sub-concept "Nursing Outcomes" showed that almost 80% of the files contained no information at all, and when outcomes were recorded, they were not correlated with the interventions and nursing diagnoses. All the mentioned aspects suggest that nurses have a knowledge deficit regarding formulating nursing interventions that address the formulated diagnoses, thereby compromising the achievement of good outcomes in patients. The specialized literature indicates that without the application of critical thinking and without proper training of nurses, the likelihood of obtaining positive results in nursing care remains low (13).

Several studies have reported numerous advantages of including nursing diagnoses as an essential part of the nursing process. These benefits aim to improve patient outcomes, increase the visibility of nursing care, enhance critical thinking skills in nurses, and provide a clearly defined autonomy of the profession (58, 60, 61). Moreover, the development of the *Advanced Nursing Process*, an extended and research-based version of the traditional nursing process, underscores the importance of applying valid assessment tools and standardized nursing language to increase the quality of patient care (16). Therefore, nurses should be educated about the *Advanced Nursing Process* and standardized nursing language. In this way, ensuring alignment with current nursing practice standards and reducing the knowledge gap between Romania and what is found internationally today.

The limitations of the study are mainly related to the following aspects: the nursing records analyzed belong to a single hospital, which limits the generalization of the results; the poor quality of the information recorded in the files prevented the use of the entire scale used in the measurement tool. As such, the maximum score could never be achieved, which limited the statistical data processing methods.

### **V.1.6. Conclusions**

This study shows that in the evaluated hospital standardized nursing documentation are used, but their structure is deficient, and the standardized nursing language is not implemented.

Regarding the degree of completion of the files, good results are observed in terms of the volume of information collected in the initial nursing assessment. However, the data collected are not correlated with the nursing diagnoses, suggesting that although data is collected, it is not used adequately in formulating diagnoses. Nursing diagnoses are formulated with free text, according to the PES formula, and most interventions are planned and documented. However, they are superficially designed and not correlated with diagnoses, making them largely inefficient.

All of this explains both the low degree of completion of the files and the poor quality of the goals and planned interventions, thus affecting the outcomes obtained in patients.

Based on the results of this study, training programs for nurses should be developed, with an emphasis on standardized nursing language and the *Advanced Nursing Process*, as well as their application in clinical practice. Also, for efficient use of the standardized nursing language, a transition to electronic documentation is recommended.

## **Chapter VI.**

### **VI.1. General Discussions**

The studies included in this paper highlight the need for the development of specific training programs for both nurses and nursing specialization students.

The comparative analysis from the first study points out that the use of nursing theories and models in clinical practice must consider several aspects, such as the institutional context and specific requirements.

In the second study, the results indicated that although a significant proportion of nurses were trained in nursing diagnosis, this is not enough for its effective implementation in practice.

The third study aimed to evaluate the nursing files from a hospital in Romania, using a standardized measurement tool validated internationally (Q-DIO). The results show that, although a large amount of data was collected, in most cases, they were not used in formulating diagnoses; and when used, they were often incorrect. Regarding interventions, these were largely planned and documented, but did not address the etiology of the diagnosis and, therefore, were inefficient. Thus, the nursing outcomes were unsatisfactory both quantitatively and qualitatively.

These findings suggest that nurses do not have enough knowledge to establish nursing interventions appropriate to the formulated diagnoses, thereby compromising the achievement of good patient outcomes. Research shows that specific training programs have led to a significant improvement in the accuracy of diagnoses made by nurses and the selection of specific interventions with a positive impact on outcomes (36, 62, 63).

### **VI.2. General Conclusions**

The use of nursing theories and models in practice is essential to highlight nursing care. The exclusive application of the biomedical model in organizing care does not reflect the nursing component, but only the medical one. Orem's theory can be a good alternative to Henderson's theory due to their common affiliation with need-based theories. Moreover, Roy's model brings into discussion elements that reflect the complexity of care.

However, selecting the optimal theory, the one that reflects the type of care specific to a particular health institution, requires knowing the selection criteria related to their applicability in practice.

The intention, attitudes, and positive behavior of nurses towards the use of nursing diagnosis in clinical practice, together with the support provided by managerial nurses resulting from our study, and the standards set by ANMCS, create favorable conditions for its implementation in clinical practice. Still, the study emphasizes that intention, attitudes, and behavior are strongly influenced by the training level of the nurses on this subject. Consequently, training programs are required for its successful implementation in clinical practice.

Therefore, managers and educators should provide nurses with training programs designed to develop and promote updated knowledge about the nursing diagnosis, including standardized nursing language.

The analysis of nursing files with the Q-DIO tool revealed a lower quality in the application of the nursing process. However, the files are structured according to the specialized literature, including all five stages of the nursing process. These results confirm the data obtained in the previous study related to the need for educating nurses about the application of the nursing process in practice.

Based on the results of this study, training programs for nurses should be developed, emphasizing standardized nursing language and the *Advanced Nursing Process*, as well as their application in clinical practice. Also, for efficient use of standardized nursing language, a transition to electronic documentation is recommended.

### **VI.3. Original Contribution**

The present work, the first of its kind in Romania, aims to provide support in maximizing the chances of successfully implementing the nursing process in clinical practice in our country.

The analysis of the intention, attitudes, and behavior of nurses towards nursing diagnosis and training related to this subject provides valuable data about the care context provided by nurses in Romania. This is complemented by the description of the nurses' profile and their training related to nursing diagnosis.

The positive results obtained in this study highlight the willingness of nurses to implement nursing diagnosis in clinical practice and also underline the acute need for specialized training on this topic.

The analysis of nursing documentation from an entire hospital provides the first information about the application of the nursing process in a healthcare institution in Romania, six years after its introduction into clinical practice, and provides the hospital with a basis for future research. The relatively weak results obtained in the analysis of nursing files highlight several important aspects:

- The need to restructure nursing files and to implement standardized nursing language
- Creation of training programs for nurses, focusing on standardized nursing language and the Advanced Nursing Process, as well as their application in clinical practice

For the first time, the Q-DIO measurement tool was used to evaluate nursing files in Romania, which required the translation and cultural adaptation of the tool into Romanian. These steps were taken before its application in the present study. Moreover, the favorable results regarding the validity and reliability of the tool in our study sample, along with validations from other international studies, demonstrate its utility, and it is therefore recommended for further studies.

Our research provides consistent and well-founded information about the care context provided by nurses in Romania and the quality of nursing documentation in hospitals of our country.

The present doctoral work can serve as a model and represents an invitation to approach the evaluation of nursing files, both for those who evaluate the fulfillment of the necessary criteria for hospital accreditation and for hospital managers who wish to improve the quality of care, including through nursing care.

#### **VI.4. Future Research Directions**

Future studies should investigate the factors that prevent the successful implementation of the nursing process in the Romanian context, with the aim of developing strategies to increase its use and quality in clinical practice. At the same time, additional studies are recommended to evaluate the effectiveness and impact of implementing nursing diagnosis in hospitals in Romania. Enhancing knowledge about



nursing theories and models is essential for selecting the most suitable one for a specific clinical context.

#### **VI.5. Dissemination of the results**

Dissemination of the results of this work has been achieved through:

- The production of report papers and the elaboration of scientific research reports within the doctoral school training program.
- Completion of the doctoral thesis.
- Four articles published in peer-reviewed journals as follows:

1. Gligor LE, Rusu H, Ciucă AG, Hirișcău EI, Domnariu CD. Exploring the influence of nursing diagnosis education on Romanian nurses' intention, attitudes, and behavior: a cross-sectional study. *Medicine and Pharmacy Reports*. 2024. doi: 10.15386/mpr-2731. (Categoria B; indexed PubMed)
2. Gligor LE, Romero-Sánchez JM, Rusu H, Paloma-Castro O, Domnariu C. Romanian nurses' beliefs on nursing diagnosis: a survey study based on the theory of planned behavior. *International Journal of Nursing Knowledge*. 2023 Oct 8. doi: 10.1111/2047-3095.12449. (Indexed ISI; FI – 1,4; Q4; indexed PubMed)
3. Gligor LE, Rusu H, Domnariu CD, Müller-Staub M. The quality of nursing diagnoses, interventions, and outcomes in Romanian nursing documentation measured with the Q-DIO: A cross-sectional study. *International Journal of Nursing Knowledge*. 2023 Sep 10. doi: 10.1111/2047-3095.12446. (Indexed ISI; FI – 1,4; Q4; indexed PubMed)
4. Gligor L, Domnariu CD. Patient care approach using nursing theories - comparative analysis of Orem's self-care deficit theory and Henderson's model. *Acta Medica Transilvanica*. 2020; 25(2):11-14. doi:10.2478/amtsb-2020-0019. (Categoria B; indexed BDI)

- Three conference papers presented at national and international conferences as follows:
  1. Gligor, L., & Domnariu, C. Educația despre diagnosticul de nursing un factor predictiv în dezvoltarea planurilor de nursing. National Surgery Conference, Eforie Nord, Romania; 2023 - oral presentation
  2. Gligor, L., & Domnariu, C. Opinia asistenților medicali din spitalele din România despre diagnosticul nursing – studiu transversal. National Nursing Conference – Romanian Nursing Association (ANR), Bucharest, Romania; 2023 - oral presentation
  3. Gligor, L., & Domnariu, C. New perspective in patient care - comparative analysis of three grand nursing theories and models. International Doctoral Students Conference IOSUD-ULBS, Sibiu, Romania; 2021. - oral presentation

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