



REVIEW ARTICLE

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## NURSES' KNOWLEDGE ABOUT NURSING CARE SYSTEMATIZATION AND NURSING PROCESS

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### ABSTRACT

**Objective:** To investigate nurses' knowledge about theorization and applicability of the nursing care systematization and the nursing process in the Intensive Care Unit. **Methodology:** This is an observational, descriptive and cross-sectional study, with quantitative and qualitative data approach. The sample included 14 nurses from the three Intensive Care Units (ICUs) of the Oswaldo Cruz University Hospital (HUOC), with data collection through a form with a structured guide through interviews, which were recorded, fully transcribed and then analyzed by the technique proposed by Bardin in 2011. The quantitative data were analyzed and processed using descriptive statistics by means of simple absolute frequency and presented in the form of tables and charts, and qualitatively by means of 2011 Bardin content analysis, with discussion in two categories: 1. Technical-scientific qualification and 2. Deployment and Implementation of the Nursing Care Systematization (NCS). **Results:** Most interviewed nurses presented theoretical understanding about NCS and Nursing Process (NP), and the benefits in relation to work organization and operation. They also reported having had the first contact during graduation, and using the tool in practice, but a good part of them were unaware of their steps and the right moment to apply them. **Conclusion:** The subject is of extreme importance, since most of the nurses interviewed did not have full knowledge in relation to the addressed subject. In this way, training projects are necessary to encourage nurses and managements' interest in deploying the NCS as a work method.

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### INTRODUCTION

Nursing Care Systematization (NCS), used by the nurse, provides the development of an individualized care and with relevant interventions, which ensures the contiguity of the assistance provided to the client in health services. Therefore, the NCS is a methodology that organizes and determines nurses' work (Silva, Garanhani, Guariente, 2014). According to Conceição et al. (2014), the NCS is defined as the

organization of a system that unites a set of inter-related elements. On the other hand, the Nursing Process (NP) is a set of specific steps of the nursing staff on the identification of the patient's needs for nursing intervention in order to obtain satisfactory results. The incorporation of the NCS supports scientifically the Nursing, promoting a holistic view of the client, in order to obtain an adequate care of specific needs of individuals, family or community, which requires organizational structure in relation to the steps involved in the

process (Marinelli *et al.*, 2016). The NP emerges as an instrument of the NCS, with a holistic nature, essential to assist in nursing work, allowing diagnosing the patient's needs, planning and executing the appropriate interventions for each diagnosis, as well as evaluating the results, improving the quality of nursing care and favoring a humanized and individualized care (Otoni *et al.*, 2015). The deployment of the NCS is not merely an alternative to organize nurses' work, it is a legal determination for nursing, as determined by Resolution Federal Nursing Council (COFEN - *Conselho Federal de Enfermagem*) 358/2009, which establishes that: "The NP should be executed deliberately and systematically in all environments, public or private, in which the professional Nursing care occurs (Ribeiro, Padoveze, 2018). Another recent Resolution of COFEN, 429 of 2012, strengthens, in its second article, that the NP should be recorded in the patient's medical records. The record must contemplate the phases of the nursing history, ND, actions or nursing interventions performed according to the NDs identified and the results obtained with the actions and interventions (Diniz *et al.*, 2015). However, even after years of its creation and offering many advantages for professionals and individuals, the deployment of the NCS has not occurred in a satisfactory way, due to a series of obstacles that need to be overcome, such as the lack of recognition by the nursing team, the shortage of professionals at health services, lack of knowledge about the process, valuation by the institution administration, as well as the lack of outcome indicators of the assistance. Furthermore, for the professional to perform it, he/she must have scientific base, skills, knowledge and attitudes guided by the ethical commitment, responsibility and the role of caring for the other (Santos, 2014). The accumulation of new knowledge observed during the care practice favored the development of nursing theories, providing a scientific character for the nursing practice. The formulation of theoretical postulates was the solution found to compile all nursing knowledge, in order to promote a service based not only on the biological dimension of the human being, but also on the understanding of the man as a social being (Silva *et al.*, 2015). Currently, the NCS establishes into an object of concern for nurses in the most varied spheres of action, in the teaching, research or assistance context. There is an increasing effort and involvement of professionals to perform the NCS in many health institutions, but the constant modifications required for its implementation demonstrate advances and setbacks, with results that change according to the local organization (Benedet *et al.*, 2016). While seeking its solidification as a care science, the nursing still seeks the organization of its professional precepts. In this context, the NCS appears as a solid theoretical structure that aims to professionalize the assistance to the client through working instruments that support in decision-making for the application of scientific, holistic and constant care (Salvador *et al.*, 2017). The objective of this study is to investigate nurses' knowledge about the theorization and the applicability of the NCS and the NP in the Intensive Care Unit (ICU).

## MATERIALS AND METHODS

This is an observational, descriptive and cross-sectional study, with quantitative and qualitative data approach. According to Gil (2010), the primary objective of descriptive research is to describe the characteristics of certain population or phenomenon and establish relationships among between. One of its most significant features is the use of standardized techniques of data collection, such as the questionnaire and

systematic observation. Cross-sectional studies have been used to investigate various health problems. In this type of study, the exposure to a factor or cause is present to the effect at the same time or time interval analyzed. It is used in investigations of effects by permanent causes (Hochman *et al.*, 2005). The research was carried out at three ICUs of Oswaldo Cruz University Hospital (HUOC), namely: ICU of Infectious Parasitic Diseases (IPD), general ICU and pediatric ICU. The hospital is an institution contracted with the Unified Health System (UHS), being a university hospital of the University of Pernambuco (UPE), located in the city of Recife. The population of the research was the universe of Nurses, Nursing interns and trainees who were at the aforementioned ICUs of the HUOC at the time of the survey, with a total sample of 14 nurses. The inclusion criteria were nurses working at the aforementioned ICUs and who spontaneously accepted to participate in the research. Nursing interns and trainees working in the sector in the period of data collection were also considered eligible. The exclusion criteria were selected nursing professionals on vacation, premium leave, medical leave, other types of leaves, and those who were transferred to other units. Data collection used a form with a structured guide, developed by the researchers themselves, with its content composed by questions about nurses' knowledge in relation to the NCS and its applicability, challenges encountered in its implementation, specific questions relating to the Nursing Diagnosis (ND), COFEN resolution, in addition to characterization data of samples, such as name, age, sex, time of formation, titration, training institution and its city/state of location. The discursive questions were recorded and divided into two thematic categories: 1- Technical-scientific qualification and 2- Deployment and Implementation of the Nursing Care Systematization (NCS).

The data were transcribed in their entirety for later analysis and treatment of content, being the research subjects named as types of precious stones to preserve their anonymity. Its applicability was with the personal touch of researchers with the Nurses, with whom the questionnaire was applied, the interviewees answered the questions personally, individually, later obtaining a response of the interviewed professionals. All data recorded on the instrument remained with the students-researchers and archived for a period of five years, counted from the data collection, and, after this period, they will be incinerated. Those who agreed to participate in the research were not exposed in any phase of the research and their anonymity was preserved by the Informed Consent Form (ICF) and data collection did not delay or hinder, at any stage, their work process. The quantitative data were analyzed and processed in a computer in the program Microsoft Office Excel®, and Word® 2010, presented in charts and tables, and analyzed with descriptive and simple statistics by means of absolute frequency. The qualitative data analysis used the content analysis technique as proposed by Bardin, composed by four operational steps, namely: organization of analysis, coding, categorization, and inference (Bardin, 2011). The study complies with the Guidelines and Regulatory Standards for Researches Involving Human Beings, Resolution 466/12 - National Health Council/Ministry of Health (NHC/MH), in which the participants signed the ICF, ensuring the guarantee of confidentiality regarding classified data involved in the research, as well as the right to freely refuse to participate or withdraw the consent, in any phase of the research, without penalty or damages to them. Data collection was carried out in the period from October to November 2016, after approval and

appreciation of the project by the Research Ethics Committee (CEP) of the Estácio College of Recife with opinion number: 1.796.381 and CAAE 61065916.2.0000.5640. The benefits follow the basic principles of bioethics: autonomy (ensures the voluntary participation of the subjects as well as the relevance and academic interest); non-maleficence (the design of the study incurs minimal risk among those involved); beneficence (the analysis of the study variables is of relevance since it analyzes Nurses' knowledge about NCS, NP and their applicability. At the same time, it contributes to the discussion about the behavioral aspects related to this practice, the ethical commitment of health professionals and their motivation to change behaviors) and justice (guarantees everyone the right to access information and knowledge here acquired and analyzed). The risks relating to the research are minimal for the participants involved, not generating directly or indirectly, physical, psychoemotional or labor problems, since the procedure of data collection does not interfere in the administrative dynamics of the sector or the hospital.

## RESULTS

The study sample included 14 Nurses from three ICUs of the university hospital of the UPE, one general care unit, one for patients with infectious diseases and one pediatric unit. The general board of Nurses on duty and day laborers of the three units includes 21 nurses, but seven refused to participate in the research.

**Table 1. Distribution of data of characterization of the study sample according to age, sex and professional practice time. Recife (PE), Brazil, 2016**

Variable	Frequency	%
Age		
21----27	2	14.3
28----34	8	57.1
35----41	2	14.3
Over 42	2	14.3
Sex		
Female	12	85.4
Male	2	14.6
Professional Practice Time		
Under 1 year	1	7.1
1 - 3 years	3	21.4
4 - 6 years	3	21.4
7 - 10 years	2	14.3
Over 10 years	5	35.8
Total	14	100

Source: Authors' primary data.

According to the data presented in table 1, the study sample was composed of 57.1% of nurses aged between 28 and 34 years, 85.4% of the interviewees were female and 35.8% had over 10 years of professional practice, on the other hand, almost 50%, 49.9% of the sample had up to six years of professional practice. According to the data presented in table 2, there was a predominance of public higher education institution, with 92.9% of the respondents and only 7.1% of private institutions, while most interviewees, 42.9%, had residential course. Most of the interviewed nurses had two degrees, residential course and post-graduation as specialization, considering the highest degree to tabulate the data. In relation to the criterion of specialization of the interviewed nurses, 13 had some sort of specialization, but only two of them have specified the area of specialization, where only one had a specialization in ICU, and the other, in the public health area.

**Table 2. Distribution of the study sample according to training institution and degree. Recife (PE), Brazil, 2016**

Variable	Frequency	%
Training Institution		
Public	13	92.9
Private	1	7.1
Degree		
None	3	21.4
Post-Graduation	4	28.6
Internship	6	42.9
Master's Degree	1	7.1
Doctorate	0	0
Total	14	100

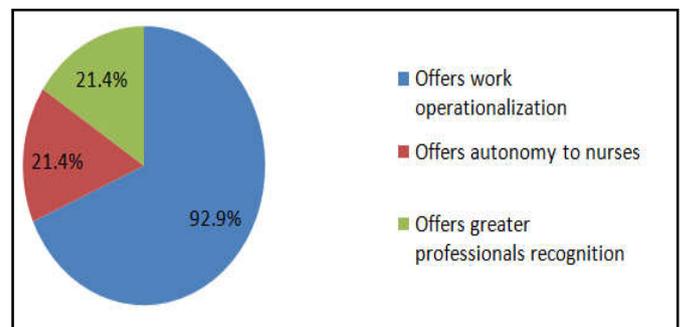
**Table 3. Distribution of the study sample regarding the general knowledge on Nursing Care Systematization. Recife (PE), Brazil, 2016**

Variable	Frequency	%
Knowledge about the NCS*		
Yes	14	100
No	0	0
First contact with NCS*		
Graduation	13	92.9
Work environment	1	7.1
Specialization	0	0
Applicability of the NCS* in the work environment		
Yes	10	71.5
Few times	3	21.4
Never	1	7.1
Total	14	100

Source: Authors' primary data.

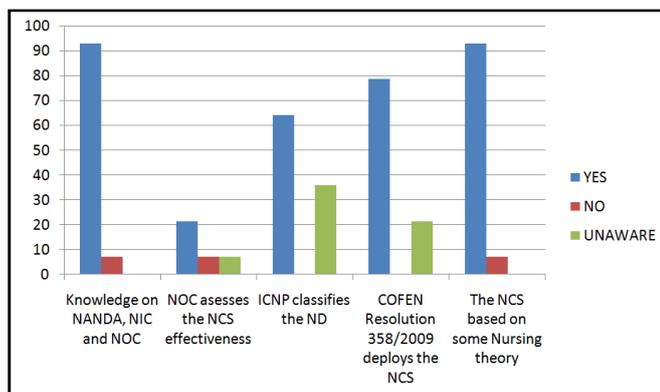
NCS\*: Nursing Care Systematization.

According to the data presented in table 3, all interviewed nurses stated knowing the NCS, 92.9% of them reported having had the first contact during graduation and 71.5% said they would apply the NCS in the work environment.

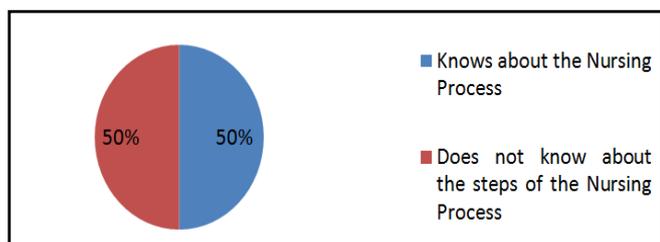


**Chart 1. Distribution of the study sample regarding the advantages of the NCS applicability. Recife (PE), Brazil, 2016**

According to the data presented in chart 1, 92.9% of the interviewed nurses stated that the NCS offers organization in the work operationalization, 21.4% believe that the NCS offers a greater autonomy to the nurse and 21.4% believe that the NCS offers a greater professional recognition, in this topic, the majority of the interviewed nurses marked more than one alternative in the moment of data collection, believing that the NCS offers a big advantage for the nurse. According to the data presented in chart 3, 50% of the nurses interviewed knew the steps of the NP, while the other 50% did not know the steps. Chart 3 shows the issue in relation to the knowledge of the steps of the NP, which contained all stages of the process, nursing history, ND, nursing prescription, evaluation or nursing evolution and nursing implementation.

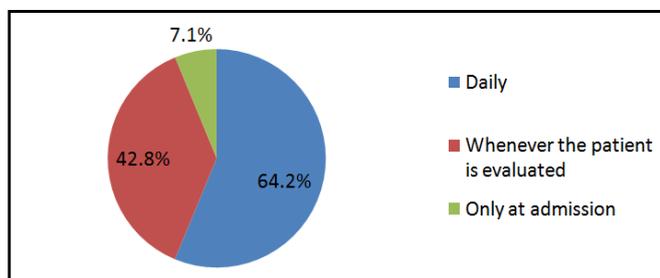


**Chart 2. Distribution of the study sample regarding the knowledge about NCS and NP. Recife (PE), Brazil, 2016.**



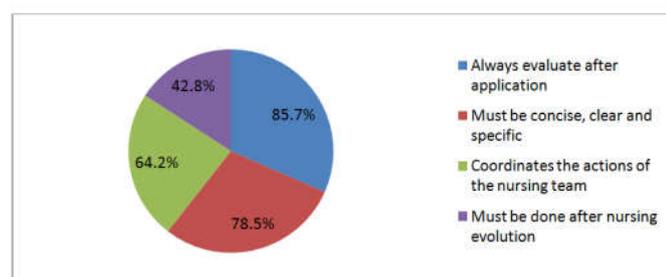
**Chart 3. Distribution of the study sample regarding the knowledge of the steps of the NP. Recife (PE), Brazil, 2016**

The criterion for data tabulation used was knowledge on the steps of the process and no knowledge, considering as knowledge those answers that were complete with all the steps marked, and as no knowledge the answers that were not complete with all the steps.



**Chart 4. Distribution of the study sample regarding the right time to apply the ND. Recife (PE), Brazil, 2016**

According to the data presented in chart 4, 64.2% of the nurses interviewed believe that the right moment to apply is daily, 42.8% said that it must be applied whenever the patient is evaluated and only 7.1% stated that it should be applied only at the patient's admission. In this topic, the interviewed nurses marked more than one alternative in the data collection instrument.



**Chart 5. Distribution of the study sample regarding the application of nursing prescription. Recife (PE), Brazil, 2016**

According to the data presented in chart 5, 85.7% of the nurses interviewed believe that the nursing prescription should always be checked when performed, 78.5% reported that it should be concise, clear and specific, 64.2% stated that it coordinates the actions of the nursing team and 42.8% thought that the nursing prescription should be done after the nursing evolution. In this topic, the interviewed nurses marked more than one alternative in the data collection instrument. From the lexical-semantic classifications after reading the participants' statements, two analytical categories emerged: 1 - Technical-scientific qualification; and 2 - Deployment and Implementation of the NCS. Of the 14 forms, three did not answer the questionnaire with discursive questions nor the interview.

## DISCUSSION

The NCS, as an organization process, provides aid for the development of interdisciplinary and humanized care methods. The care methods, in any denomination, currently represent a great achievement in nursing care. The nurse involved in this process needs to broaden and deepen his/her knowledge in the practical area. More than 50% of the sample studied were under 35 years, showing a young population, with the possibility of expansion of scientific and technical knowledge in high complexity, thus demonstrating a trend to seek areas of critical care. Younger nurses seek to engage with areas of greater complexity, and the decreased number of nurses working in the ICU aged over 40 years may be indicating that these professionals, after reaching this age, are placed in other sectors, crave administrative positions, seek the teaching area or even quit the profession (Vaz *et al.*, 2014). More than 90% of the interviewed nurses are female. In relation to the age, surveys conducted by other authors found the same profile, as well as the same age range was presented by COFEN in relation to the average age of nurses in Pernambuco (Nicolau *et al.*, 2019).

The results of this research show a distribution well equated between the ranges of professional experience of the studied sample, showing that the ICUs surveyed have both more experienced professionals as those less experienced. By analyzing the time of formation, the authors show that, in this sector, there is the possibility of finding nurses with little experience to deal with specific situations and critical care, as well as those with more experience in the profession, which enables the development of skills, safety and experience for decision-making (Santos and camel, 2015). In the variable related to the training institution, 92.9% of the respondents concluded their graduation in public institutions, and 42.9% of the participants have some type of specialization. A study on nursing care systematization found similar data: nurses' perception, in which most interviewees graduated in public institution. In relation to data on supplementary training, in this study, 83.3% of those surveyed had a specialization in some nursing area, differing from our results, once it can show a possible gap about the professional qualification among the nurses surveyed (Silva *et al.*, 2015).

The nurse has knowledge about the NCS and its importance in practice, realizing that its operationalization comes from the professional development, in the graduation process, and expands the work practice; however, greater expertise is necessary for the understanding and implementation of the NCS in the nursing practice. The knowledge is of extreme

importance, because it offers the client advantages, in which his/her follow-up will occur in a more complete way (Silva *et al.*, 2015). Nurses' role in all NCS steps is of great importance, especially in moments of planning its implementation, which reveal more adherence to the practice of systematization, and provide greater use of the tool (Botelho *et al.*, 2014). The implementation of classifications in nursing practice, such as NDs, has represented a transformative experience that has encouraged some nurses to face this challenge during the assistance, research and teaching.

The use of ND is fundamental in nurses' work routine, establishing the function of guiding and substantiating nursing interventions, with a proper and uniform language, leaving them viable. It also directs nursing care for the needs of each care subject, simplifies the choice of the most appropriate interventions, objectively records reactions and allows for the next assessment of the performed nursing care (Benedet *et al.*, 2016). The NP is defined as an activity that organizes nursing actions, through a sequence of interrelated and interdependent phases. In this way, the breaking of the effectiveness of the steps presented in the study differs from the theoretical definition, because the NP needs to base on the nurse's scientific knowledge, which identifies the individual needs in their entirety, and, through an intervention, provides the expected results. This separation of the sequence hinders the execution of a logical reasoning, with the risk of making it a mere realization of care routines, distancing it from a scientific process (Benedet *et al.*, 2016). In the thematic category 1 - Technical-scientific qualification, five statements point out the lack of preparation in both the design as development of the nursing process as a factor of difficulty to carry out the systematization fully, evidenced in the following statements.

*"Lack of knowledge in relation to NCS of other team members and nurses"* (Ruby).

*"We need clearer and more practical prescriptions"* (Turquoise).

*"Sometimes, it's hard to perform the diagnosis according to the literature"* (Topaz).

*"The team's lack of knowledge itself, requiring some presentation training for the team"* (Jade).

*"The NCS is superficial, just for the record"* (Emerald).

The NCS justifies the exercise of the profession regarding the method, staff and instruments, allowing the implementation of the NP as an instrument that determines the Nursing care and documentation of professional practice. Therefore, the NCS must be based on scientific knowledge and means to cooperate for the teaching and learning process, allowing for the decision-making process, subsidizing clinical and critical reasoning in nursing (Pereira *et al.*, 2016). The effective deployment of the NCS becomes impossible without properly preparing the team regarding the theoretical and practical skill. In this way, the planning stages for its deployment should contain the recognition of the priority of training nurses and investing, if necessary, in the organization for implementing this practice. The thematic category 2 speaks of the deployment and implementation of the NCS: the interviewees' statements show that some points of challenge for the NP are beyond problems of human resource management of health services as well as the lack of a proper implementation of the

process more consistent with the scientific precepts recommended to trigger an incentive for professionals to use it, as evidenced in the following statements.

*"Besides, the service still needs to implement it as a work method and favor the subsidy for its permanence in the work environment"* (Jade).

*"Especially diagnosis and prescription in function of the time"* (Ruby).

*"Due to the several performed functions, the NCS sometimes becomes complicated, in agitated shifts, for example"* (Emerald).

*"Insufficient time and number of professionals"* (Topaz).

*"It's hard, not all professionals are willing to do it"* (Amethyst).

*"Better forms"* (Abalone).

*"We lack a routine for implementation"* (Onyx).

*"Our several tasks hinders performing the NCS as it should be and specifically for each patient"* (Crystal).

This category was the most evident and expressive in the interviewees' statements, representing an important point of discussion on the difficulties of implementation of NCS and NP health services and the way professionals see this difficulty. The implementation of the NCS is fairly fragmented, for reasons that are associated with the amount of human resources found at health institutions to carry out all the activities proposed by this methodology. The fragmented implementation of the NCS results in an incomplete care provision, i.e., there is no care systematization once not all steps are completed, in which COFEN Resolution 358/2009 states that the NP is organized into five interrelated, interdependent and recurrent steps (Santos *et al.*, 2014).

## Conclusion

The results of this study allow concluding that the nurses believe that NCS is important, which, according to them, organizes and operationalizes the work, offers autonomy to the nurse, improving the care quality. Nevertheless, we found that many professionals showed lack of knowledge about the systematization: many reported not knowing the steps of NCS, showed doubts regarding the nursing prescription and when using the ND. Nonetheless, the deployment of the NCS is a discouraging process and often impossible in nursing professionals' practice. The nurses identified several challenges, of the most varied origins, such as lack of time, insufficient number of professionals, work overload, lack of a deployment routine. Therefore, the results presented show the need for training projects to encourage nurses and managements' interest in deploying the NCS as a work method. Nurses need to understand more the essence of the NCS and the NP so that it ceases to be regarded as a bureaucratic and superficial activity, because it brings benefits for both patients as professionals.

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