



**PHILOSOPHICAL FUNDAMENTALS AND CONCEPT OF OUTCOMES
CLASSIFICATION: CONTRIBUTIONS IN NURSING ASSESSMENT**
**FUNDAMENTOS FILOSÓFICOS E CONCEITOS DA CLASSIFICAÇÃO DE RESULTADOS:
CONTRIBUIÇÕES NA AVALIAÇÃO DE ENFERMAGEM**
**FUNDAMENTOS FILOSÓFICOS Y CONCEPTOS DE LA CLASIFICACIÓN DE RESULTADOS:
CONTRIBUCIONES EN LA EVALUACIÓN DE ENFERMERÍA**

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ABSTRACT

Objective: to reflect on the concepts supporting the Nursing Outcomes Classification - NOC. **Method:** a descriptive study type reflective analysis of the literature. **Results:** the construction according to the classification is based on management fundamentals by Avedis Donabedian and Ernest Codman. It also considers the postulates of Florence Nightingale for the patient and the environment that could result in the maintenance and recovery of health. Therefore, the philosophical principles of classification support the patient safety policy, “appropriateness” of nursing interventions and hence the quality paradigm in health. **Descriptors:** Health Assessment; Ratings on Health; Quality of Health Care; Outcome Assessment (Health Care); Nursing.

RESUMO

Objetivo: refletir sobre os conceitos que sustentam a Classificação de resultados de enfermagem - Nursing Outcomes Classification - NOC. **Método:** estudo descritivo, tipo análise reflexiva da literatura. **Resultados:** a construção de acordo com a classificação tem como base os fundamentos de administração por meio de Avedis Donabedian e Ernest Codman. Considera, ainda, os postulados de Florence Nightingale relativos ao paciente e ao ambiente que poderiam resultar na manutenção e recuperação de saúde. Portanto, os princípios filosóficos da classificação sustentam a política de segurança do paciente, na “appropriateness” das intervenções de enfermagem e, conseqüentemente, no paradigma da qualidade em saúde. **Descritores:** Avaliação em Saúde; Classificações em Saúde; Qualidade da Assistência à Saúde; Avaliação de Resultados (Cuidados de Saúde); Enfermagem.

RESUMEN

Objetivo: reflexionar sobre los conceptos que sustentan la Clasificación de resultados de enfermería - Nursing Outcomes Classification - NOC. **Método:** estudio descriptivo, tipo análisis reflexiva de la literatura. **Resultados:** la construcción de acuerdo con la clasificación tiene como base los fundamentos de administración por medio de Avedis Donabedian y Ernest Codman. Considera, también, los postulados de Florence Nightingale relativos al paciente y al ambiente que podrían resultar en el mantenimiento y recuperación de salud. Por lo tanto, los principios filosóficos de la clasificación sustentan la política de seguridad del paciente, en la “appropriateness” de las intervenciones de enfermería y, conseqüentemente, en el paradigma de la calidad en salud. **Descriptor:** Evaluación de la Salud; Clasificaciones en Salud; Calidad de la Atención de Salud; Evaluación de Resultado (Atención de Salud); Enfermería.

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INTRODUCTION

The health evaluation arises from the concern of diminishing resources. World War II has been a reference to the increase in spending on health as a result of great scientific development.¹ Since then, different concepts such as health quality, efficiency, and effectiveness have emerged to reduce and analyze spending without prejudice to the improvement of care for patients' health. Different organizations have sought to systematize the information on the results obtained to analyze the costs resulting from the use of technologies and health practices.^{2,3}

Since Florence Nightingale, the analysis of strategies that can assist in the evaluation processes through systematic information began. The effort to identify which actions related to the patient and the environment could trigger the maintenance and recovery of health. Nightingale tried to show that a formal and systematic preparation for the acquisition of knowledge in the nursing area was possible and necessary.

In this context, these concepts helped in the analysis of interventions that caused results in the health status of the patient. In Italian, the word "appropriatezza" of Care has directed the change in the teaching and practice of nursing in Italian search for positive health outcomes.⁴ They support that the era of evidence-based care practices, critical thinking with the elaboration of a body of structured knowledge and supported by consistent (research) and sustainable (cost analysis) arguments can enable the development of appropriate professional attitudes.

One of the attempts to develop and evaluate the results obtained by nursing establishes the Classification of Nursing Outcomes (NOC). For this, the results describe the state and behavior of each patient or family caregiver, taken individually, including perceptions and subjective states.

The use of the nursing outcomes classification/NOC can assist in the evaluation of the nursing actions by analyzing the patient's condition. Therefore, it discusses the results of these interventions from the state description, behavior, reactions and feelings of the patient in response to the care provided.⁵

The literature presents specific discussions on the results of the evaluation in nursing; most studies addresses the applicability and use of classification, specific clinical conditions such as patients with chronic

diseases.⁶ Furthermore, content validation publications in surgical and clinical patients⁷ and orthopedic⁸ can be observed. However, this article focuses on the reflection on the question: what are the concepts that support the construction of the NOC results classification?

OBJECTIVE

- To reflect on the philosophical and conceptual foundations adopted by the results Classification NOC.

MÉTHOD

This is a descriptive, reflective analysis type, on the philosophical foundations and concepts underlying the Nursing Outcomes Classification (NOC) and its contributions in the context of health assessment. Such reflection, based on the literature, includes the construction of this classification as standardized language and their contributions to the evaluation of results of nursing practice and quality of care.

RESULTS

♦ Health Quality paradigm implications for the evaluation of results

In recent decades, the concern in implementing measures that improve the quality in hospital organizations was developed to improve their management and improve the efficiency of these services. Some official instruments for assessing the performance of hospital organizations use a set of criteria to be assessed from pre-established standards, based on the application of concepts and technics.⁹

The concepts of evaluation of the results, or the era of quality, were first broadcast in other spheres, especially in the industrial sector, which provided subsidies for the use of quality tools. However, although with its recent discussion developments in health services has its history since the mid-century XIX.¹⁰

Through these records, Florence filed patient's data and used his knowledge of mathematics and statistics to make his assessments of systematic practices. Using graphics, he presented the data in a clear way to favor exposure.¹¹ He created a diagram and used to graphically represent the mortality rates during the Crimean War, showing the result of his interventions.

Other studies have contributed to evaluating the results. One of them was Ernest Codman, an American surgeon who in 1910 proposed the hospital standardization

system known as “result.”^{12,13} According to him, a hospital would monitor each long-term patient to determine if the treatment was effective. Otherwise, the hospital tries to determine the reason for such cases could be successfully treated in the future.

Avedis Donabedian, the Armenian pediatrician, living in the United States, also contributed to the evaluation of results. A pioneer in the health sector, he devoted systematically in studies about health quality, based on management variables. He sought to measure the structural conditions of services, from the physical parameters, enable personnel and/or equipment performance. He also considers other ways to carry out the assessment process through the indicators, sensitivity function or specification of the tasks of medical care and the indication and proper therapeutic application.¹⁴ Moreover, Donabedian addressed the systems theory with the notion of structure indicators, process and result adapting them to hospital care approaches that have become a classic in quality health studies.¹⁵

The Structure refers to the characteristics necessary for the care process, as the physical

area, human resources (number, type, distribution, and qualification), material and financial resources, information systems and technical and administrative normative instruments, political support and organizational conditions.¹⁶

The Process corresponds to the provision of assistance under technical and scientific standards established and accepted in the scientific community on an issue and the appropriation of resources in its quantitative and qualitative aspects. It includes the recognition of problems, diagnostic methods and cares given.¹⁷

The Results refer to the consequences of activities in the health services or the professional in changes in the health status of patients. It also considers the changes related to knowledge and behaviors, as well as user satisfaction and worker linked to the receipt and delivery of care.¹⁶

Also, the contribution to the expansion of the concept of quality is expanded by the use of the so-called seven pillars: efficiency, effectiveness, efficacy, optimization, acceptability, legitimacy, and fairness, shown in Figure 01.¹⁶

Efficiency	The best to do under the most favorable conditions, given the patient's condition and other circumstances kept constant.
Effectiveness	Improved health, achieved or achievable in the usual conditions of everyday practice.
Efficacy	It is a measure of the cost that a given improvement in health is achieved.
Optimization	It becomes relevant as the health care effects are not evaluated absolutely, but about costs.
Acceptability	Synonymous to adapt care to the wishes, expectations, and values of patients and their families.
Legitimacy	Fashion care of acceptability which is seen by the community or society in general.
Fairness	The principle by which one determines what is the fair and reasonable distribution of care and its benefits among members of a population.

Figure 1. The seven pillars of quality according to Donabedian.

In these concepts, the nursing emerges with the Nursing Outcomes Classification (NOC).⁴ It standardizes the criteria to be assessed on patients, and it uses some concepts proposed by Donabedian, especially for the evaluation of the nursing process and concepts covered by the seven pillars.

These concepts help and support the understanding of the Classification NOC and can be seen below.

◆ Conceptions of the Classification NOC in evaluating the results

The implementation of care in health institutions can be carried out by professionals from different areas, which contribute to the change of the patient’s condition. However, there is little clarity on the standardized measurement criteria of the results obtained from nursing interventions.

Measurement of nursing outcomes should specifically evaluate the response of patients to assistance provided by nursing that aids in determining the change in the health or welfare of patients. The use of standardized results provide data necessary to clarify the nursing knowledge and determine the effectiveness of care.⁵

The attitude of assessing whether there were implemented results in the nursing interventions confer a character of professional and organizational proactivity, reinforcing the commitment to ethical principles and caring responsibility. This is critical and propositional processes intended to achieve border crossing that distinguish the improper care of that which is considered appropriate and socially acceptable in the light of contemporaneity. Therefore, the concept of “adequacy” of the care process

includes aspects related to methodological evidence, the feasibility of implementing the interventions and their individual and social acceptability.⁵

Even more, if we think the way to go in clinic structuring of nursing, development of solidified clinical research, monitoring the dosage of the nursing intervention is crucial. It requires demonstration of efficacy and effectiveness of interventions, the specifics of the employed therapeutic dose. In other words, the intervention health education of a diabetic patient, male, elderly person living alone, widowed and who can not adhere to

the treatment regimen. It is different from a woman, old, who lives alone, who has diabetes, but has adherence to following the guidelines. However, there is a dose of differentiated intervention, and the expected results and costs are different for the same public with the same diagnosis nurse or doctor, and with the same intervention. Nurses need to document and demonstrate a clear and systematic way of these situations in the future, to ensure the specificity of their make/take care that demonstrates the “appropriatezza” of their care.

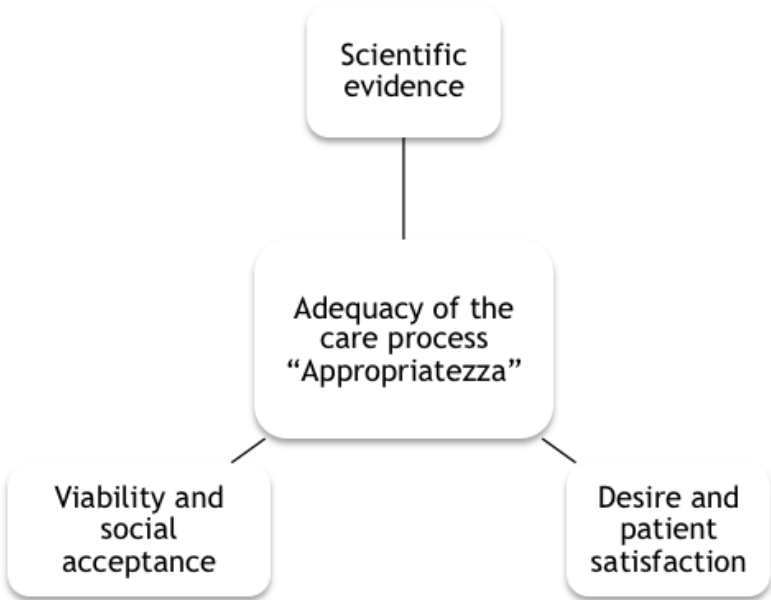


Figure 1. Conceptual basis of the adequacy of the care process “Appropriatezza”. Rio de Janeiro, 2016.

Due to this growing demand to describe and measure the results of practice, terminologies have been developed, such as the Nursing Outcomes Classification (NOC), which started in 1991¹⁸. A group of experienced nurse researchers at the University of Iowa conducted extensive literature review with the purpose of point results, influenced by the nursing actions. They were grouped and refined by expert nurses from different specialties. The Iowa Nursing Outcomes Project have constantly been world tested to verify its validity and reliability in various specialties.

The first publication of the NOC was in 1997 with the proposal of 190 results. The second and third editions dated from 2000 and 2004 with 260 and 330 results, respectively. In 2008, with translation into Portuguese published in 2010, the 4th edition was drafted, which covers 385 results.

Each result has specific indicators that correspond to behavior, perception or more specific states of an individual, a family or a community that serves as a trace to measure and assess a result.⁴

These indicators have a Likert scale

graduated in five points to facilitate the identification of clinical, by different scores over time. Thus, they can be classified as individual items to direct nursing interventions and allow the measurement from the current state of the patient.¹⁹

The current classification is the organization in seven areas, namely sphere of activity, study or interest²⁰. They are functional health; physiological health; psychosocial health; Knowledge and healthy behavior; perceived health; family health and community health. They are divided into 31 classes, that is, subdivision of a larger group; a division of people, grade or category.²⁰

There are 14 scales to assess the results, which enable the measurement at any point in an ongoing clinical condition of the patient. The fifth point reflects the patient’s condition to be desired about the outcome, facilitating the identification of changes in their status through different scores, through assessments over time.⁸ They are: extension of which propagates; or frequency characteristics of an affirmative perception or acceptance; degree of intensity; often to make it clear for reporting or behavior;

extension of a response or negative or adverse condition; degree of proximity to a desired state; degree of perception of positive expectations; degree of cognitive information that is understood.⁴ Thus, the use of NOC enables monitor the improvement, worsening or stagnation of the patient's condition during a care period.

It is considered as one who receives nursing care in which care is expected to produce expected, that is, effective.⁴ Each result can be applied to the individual, family and community levels, compound structurally by title, indicators, scales measurement and supporting references. However, it is noteworthy that there are more results described in the rating for the individual, rather than collective or family, perhaps for the classical acting in the hospital. Thus, it is necessary the validation studies and for primary nursing.

Another limitation of the classification that deserves reflection, for future development, deals with the design of conceptual definitions for each criterion/state assessment, that is establishing measurable parameters that would be 1, 2, 3, 4 and/or 5 for each criterion rated. This could reduce the risk of

subjectivity in the evaluation and greater harmony in the use of classification by different nurses. On the other hand, such a measure would make the complex scales and legitimacy require statistical tests of reliability and validity; so many studies still need to be performed.

Moreover, from the NOC application of objective evaluation of the results of the patient, the classification was developed to conceptualize, label, defining and classifying the results and indicators sensitive to nursing care. One of the motivations for its development was the existence of the classification of nursing diagnoses of NANDA-INTERNATIONAL, which resulted in the idea of creating other two classifications, one intervention (Nursing Interventions Classification/NIC) and other nursing results, which could be used liked to it.¹⁸

The links between the results evaluated from this classification and diagnosis evidenced by NANDA-I occur through the nursing knowledge, which relates the problem to the current health status of the patient and the aspects of the state that are expected to be developed or improved from an intervention (Figure 2).

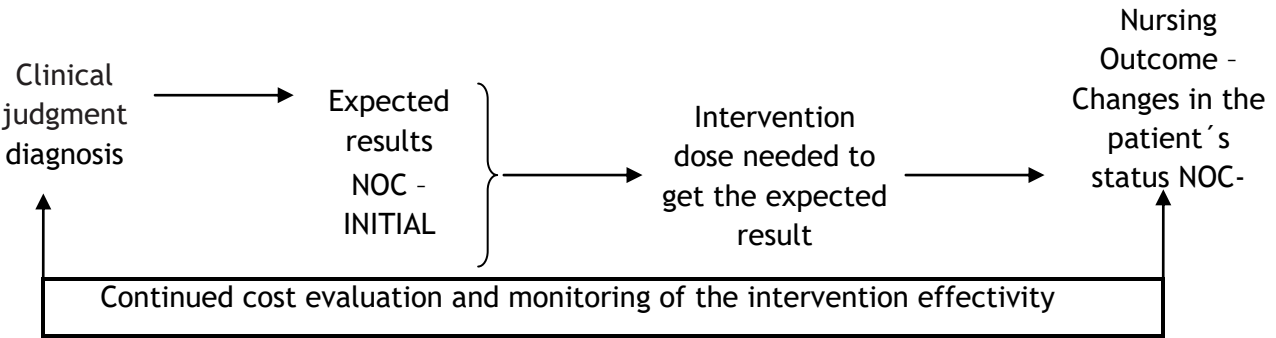


Figure 2. The evaluation process of the nursing actions.

This model represents the nursing work and relates to the application of knowledge of the area to the scientific method. It can be based on the nursing process, assisting in the interconnection of the three domains of knowledge focused on 1) diagnosis, 2) interventions and 3) results. Clinical decisions about patient care are taken from the responses, possible outcomes, and interventions.²⁰⁻¹ This process is not linear, but it is grounded in nursing reflection and the patient's response to treatment. Changes in the care plan can be made from the viability of these results.

It is worth mentioning a possible point of the applicability of classification, to detail the evaluators/change of indication criteria of the patient's condition by a nursing intervention that allows reflection questions: are we evaluating the result? Or, are we concurrently

modifying and evaluating the status of the nursing diagnosis? Would it be necessary the two classifications? Thus, the absence of a diagnosis, or its worsening, would also not be indicative of results of worsening or improvement of the patient? These are unanswered questions that deserve to be debated, researched and tested in nursing practice.

Thus, the evaluation of each outcome of health care includes not only the effectiveness of interventions as well as its effectiveness. In research on efficacy, the results of the operations are studied under controlled conditions, so that optimal conditions are permitted, regardless of the costs; the effectiveness is uncontrolled studies highlighting that the results achieved with practice.^{4,20}

With the inclusion of new results, it is

necessary to validate these results to verify its applicability in different situations. Some results of the NOC, designed to measure results sensitive to nursing interventions have not been investigated for the content validity and sensitivity when nursing interventions applied.⁹ However, studies already have shown that most features reliability, validity, and sensitivity to changes.

This sensitivity is considered as changing an important aspect of the adequacy of a measure, the extent to which this measure can capture changes in a phenomena⁴. Therefore, its use contributes to the evaluation of the effect of nursing care and the identification of patient results sensitive to this care. The measured results must indicate change when clinically relevant changes have occurred and did not show changes when clinically discernable changes have not occurred.^{8,9}

CONCLUSION

By monitoring the care process, the classification can contribute to the analysis of each intervention performed, by following the levels of indicators. It also favors in the identification of improvement and worsening of patients, the best successful interventions replication, in addition to cost control. Therefore, more research is necessary to analyze the concept of each result and use of criteria to facilitate the application of the classification. Once the trial may vary with the population that classification is applied, studies in different groups of subjects may facilitate the evaluation in different populations.

REFERENCES

1. Santos WJ, Giacomini KC, Firmo JOA. Assessment of the technology of care relations in the health services: perception of the elderly included in the family health strategy in Bambuí, Brazil. *Ciênc saúde coletiva* [Internet]. 2014 [cited 2016 May 05];19(8):3441-50. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232014000803441
2. Guimarães ZB, Rodrigues GRS, Menezes IG. Indicators as quality instruments for the practice of nurse care: report of an experience. *Rev baiana enferm* [Internet]. 2013[cited 2016 Apr 12];27(1):93-7. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692014000200234
3. El-Jardali F1, Hemadeh R, Jaafar M, Sagherian L, El-Skaff R, Mdeihly R et al. The impact of accreditation of primary healthcare centers: successes, challenges and policy implications as perceived by healthcare providers and directors in Lebanon. *BMC Health Serv Res* [Internet]. 2014[cited 2016 May 20];14(86):1-10. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24568632>
4. Dipartimento della Programmazione e dell'ordinamento eel Servizio Sanitario Nazionale (2012). *Manuale di formazione per il governo clinico: appropriatezza*. Itália: Luglio.
5. Morilla-Herreira JC, Morales-Asencio JM, Fernández-Gallego MC, Cobos EB, Romero AD. Utility and validity of indicators from the Nursing outcomes classification as a support tool for diagnosing Ineffective self health management in patients with chronic conditions in primary health care. *Anales Sis San Navarra* [Internet]. 2011[cited 2016 Mar 30];34(1):51-61. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21532646>
6. Segnfredo DH, Almeida MA. Nursing Outcomes Content Validation According to Nursing Outcomes Classification (NOC) for Clinical, Surgical and Critical Patients. *Rev Latino-Am Enfermagem* [Internet]. 2010 [cited 2016 Mar 30];19(1):34-41. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21412627>
7. Segnfredo DH, Almeida MA, Unicovsky MR. Nursing outcome indicator validation for patients with orthopedic problems. *Rev Esc Enferm USP* [Internet]. 2011 [cited 2016 Apr 02];44(4):1059-64. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342010000400029
8. Machado JP, Martins ACM, Martins MS. Quality assessment of hospital care in Brazil: a systematic review. *Cad. Saúde Pública* [Internet]. 2013 [cited 2016 Apr 10];29(6):1063-82. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342010000400029
9. Manzo BF, Brito JM, Corrêa AR. Implications of hospital accreditation on the everyday lives of healthcare professionals. *Rev Esc Enferm USP*. 2012[cited 2016 May 06];46(2):388-94. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342012000200017
10. Heydari A, Fatemi SNL. Nursing developments in Iran during World Wars I & II: A historical study. *J Nurse Midwifery* [Internet]. 2015 [cited 2016 Mar 10];2(1):1-8. Available from: http://jnms.mazums.ac.ir/browse.php?a_id=57&sid=1&slc_lang=en

11. Hirsch JA, Schaefer PW, Romero JM, Rabinov JD, Sanelli PC. Comparative effectiveness research. *AJNR Am J Neuroradiol* [Internet]. 2014 [cited 2016 Apr 02];35(1):1677-80. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24874531>
12. Fortes MT, Mattos RA, Baptista T. Accreditation or accreditations? A comparative study about accreditation in France, United Kingdom and Cataluña. *AMB rev Assoc Med Bras* [Internet]. 2011[cited 2016 Apr 10];57(2):239-46. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/21537714>
13. Glenn G, Gardner A, O'Connell J. Using the Donabedian framework to examine the quality and safety of nursing service innovation. *J clin nurs* [Internet]. 2013 [cited 2016 Mar 10];23(1):145-55. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23834585>
14. Tanaka OU. Primary health care evaluation: a new approach. *Rev Saúde Soc* [Internet]. 2011[cited 2016 Mar 10];20(4):927-34. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-12902011000400010
15. Donabedian A. *Explorations in Quality Assessment and Monitoring Health*. 1ed, Michingan:Administration Press;1980.
16. Hu R, Liao Y, Du Z, Hao Y, Liang H, Shi L. Types of health care facilities and the quality of primary care: a study of characteristics and experiences of chinese patients in Guangdong Province, China. *BMC Health Serv Res* [Internet]. 2016 [cited 2016 June 01];16(1):335-6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/27484465>
17. Garbin LM, Rodrigues CC, Ross LA, de Carvalho EC. Nursing Outcome Classification (NOC): identification of the related scientific production. *Rev. Gaúcha* [Internet]. 2009 [cited 2016 Apr 02];80(3):508-15. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20187433>
18. Crossetti MGO, Bittencourt, GKGD, Lima AAA, Goes MGO, Saurin G. Structural elements of critical thinking of nurses in emergency care. *Rev gaúch Enferm* [Internet]. 2014[cited 2016 Mar 10];35(3):55-60. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25474841>
19. Moorhead S, Johnson M, Mass M, Swanson E. *Nursing Outcomes Classification (NOC): Measurement of health outcomes*. 5ªed. St. Louis: Mosby Elsevier; 2013.

20. Ferreira JDL, Brito KKG, Aguiar ESS, Lima CLJ, Soares MJGO, Costa MML. The International classification for nursing practice: participation of brazilian nurses in the project of the international council of nurses. *J Nurs UFPE on line* [Internet]. 2013 [cited 2016 Apr 02];7(4):1189-94. Available from:

http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-21002009000700006

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