RESEARCH

Revista Brasileira de Enfermagem
REBEn

Analysis of the decision-making process of nurse managers: a collective reflection

Análise de modelo de tomada de decisão de enfermeiros gerentes: uma reflexão coletiva

Análisis del modelo de decisiones decisión de gerentes de la enfermera: un reflexión colectiva

Elizabete Araujo Eduardo[I], Aida Maris Peres[I], Maria de Lourdes de Almeida[I], Karina de Dea Roglio[II], Elizabeth Bernardino[I]

[I] *Universidade Federal do Paraná, Postgraduate Program in Nursing. Curitiba, Paraná, Brazil.*
[II] *Universidade Federal do Paraná, Department of General and Applied Administration. Curitiba, Paraná, Brazil.*

How to cite this article:
Eduardo EA, Peres AM, Almeida ML, Roglio KD, Bernardino E. Analysis of the decision-making process of nurse managers: a collective reflection. Rev Bras Enferm. 2015;68(4):582-8. DOI: http://dx.doi.org/10.1590/0034-7167.2015680414i

Submission: 02-14-2015 **Approval:** 04-20-2015

ABSTRACT

Objective: to analyze the decision-making model adopted by nurses from the perspective of some decision-making process theories. **Method:** qualitative approach, based on action research. Semi-structured questionnaires and seminars were conducted from April to June 2012 in order to understand the nature of decisions and the decision-making process of nine nurses in position of managers at a public hospital in Southern Brazil. Data were subjected to content analysis. **Results:** data were classified in two categories: the current situation of decision-making, which showed a lack of systematization; the construction and collective decision-making, which emphasizes the need to develop a decision-making model. **Conclusion:** the decision-making model used by nurses is limited because it does not consider two important factors: the limits of human rationality, and the external and internal organizational environments that influence and determine right decisions.

Key words: Nursing; Practice Management; Nursing Administration Research; Professional Competence; Decision Support Practices.

RESUMO

Objetivo: analisar o modelo de tomada de decisão construído por enfermeiros na perspectiva das teorias da administração sobre processo decisório. **Método:** pesquisa qualitativa na modalidade pesquisa-ação, realizada de abril a junho de 2012 que, por meio de questionário semiestruturado e seminários, buscou explorar a compreensão de nove enfermeiros gerentes de um hospital público do sul do Brasil sobre processo decisório e a natureza da tomada de decisão. Os dados foram submetidos à análise de conteúdo. **Resultados:** emergiram duas categorias: Situação atual de tomada de decisão, que apresentou falta de sistematização; e Construção coletiva do processo decisório, que enfatiza a necessidade da construção de um modelo de tomada de decisão. **Conclusão:** o modelo de tomada de decisão elaborado é limitado, pois não considera importantes aspectos do processo decisório: os limites da racionalidade humana e o ambiente externo e interno das organizações que interferem e determinam as decisões.

Descritores: Enfermagem; Gerenciamento da Prática Profissional; Pesquisa em Administração de Enfermagem; Competência Profissional; Técnicas de Apoio para a Decisão.

RESUMEN

Objetivo: analizar el modelo de toma de decisiones construido por enfermeras desde la perspectiva de las teorías del proceso de toma de decisiones de la gerencia. **Método:** la investigación cualitativa en la investigación-acción forma, llevada a cabo entre abril y junio de 2012, que a través de cuestionario y seminarios semiestructurada explorado la comprensión nueve gerentes de enfermería en un hospital público en el sur de Brasil en la toma de decisiones y la naturaleza de las decisiones decisión. Los datos fueron sometidos a análisis de contenido. **Resultados:** emergieron dos categorías: Situación actual de la toma de decisiones, lo que demostró la falta de sistematización; Construcción y toma de decisiones colectivas, que hace hincapié en la necesidad de

desarrollar un modelo de toma de decisiones. **Conclusión:** el modelo de toma de decisiones es limitado, ya que excluye los límites de la racionalidad humana; y el entorno externo e interno de las organizaciones que influyen y determinan las decisiones correctas.
Palabras clave: Enfermería Gestión de la Práctica Profesional; La Investigación en Administración de Enfermería; Competencia Profesional; Técnicas de Ayuda a la Decisión.

CORRESPONDING AUTHOR **Elizabete Araújo Eduardo** E-mail: beteokale@yahoo.com.br

INTRODUCTION

Decision-making is part of the activities of the managerial role. Nurses who work in nursing services management spend most of their time analyzing situations and making decisions. Being assertive confers on the nurse the status of a successful professional. Adopting a decision-making model decreases the chance of choose tenuous and ineffective solutions[1]. However, analysis of a problem in a systematic way does not guarantee 100% accuracy, but reduces the margin of error and makes a professional safer when confronting new situations[2].

Decision-making is an important managerial instrument for nurses. Factors involved in decision-making that assist in the development of activities related to planning, communication, conflict management, negotiation, and leadership, that are inherent in the managerial dimension, must be understood, along with management principles that support and direct their practice[3], because if used improperly, they may affect the quality of care.

Rapid decision-making is a need of organizations. However, complex issues are part of the universe that surrounds the decision-making process, such as the past experiences, values, beliefs, skills and technical knowledge of the decision maker. These aspects bring subjective elements to the decision-making scenario, transposing technical knowledge that should be considered, such as the behavior of limited rationality[4].

In the context of this research, the nursing service was contemplated due to the changes directed by the management decentralization process and, from these changes, sectional managers and areas nurses became responsible for all management activities of units under their responsibility. In the organizational chart, these nurses were assigned as full members of the institutional management committee. This research was designed through a role to support managers in strengthening their skills in the administration area.

As a contribution to the institutional context, characterized by implementation and consolidation of new services, this study aimed to analyze the decision-making model developed by nurses in a public hospital. The object of the study was the decision-making process and decision-making as an instrument for management practice, considering the importance of advanced studies in this area, and the need to highlight practical and meaningful action for professionals, given the wide concentration of theoretical studies on the theme[5].

This article aims to analyze the outlined decision-making model in a participatory way by nurse managers, from the perspective of theories of managerial decision-making processes.

METHOD

Based on the phenomenon studied and the proposed objective, a qualitative approach was used, with the mode of action research. This method allows researchers to diagnose and propose actions for problems experienced by the actors in a collective manner. For the choice of action research, it was thought that nurses, in order to participate in discussions about the work process, changes or service implementation, sometimes incorporate their values into the ideas, appropriating actions and giving them consistency and legitimacy[6].

Among the participants of the process, the researcher himself is included; in this context, he assumes an active role in the observed reality. In this methodological approach, the present moment is privileged, which is also a characteristic that enables directioning the actions to the moment experienced by the nurses, thereby making them analyze the situation and plan actions in order to solve the difficulties encountered. This method assumes the use of a conceptual framework[6] and the use of the Logical Framework (LF), which allowed for the analysis and monitoring of the project[7] from the first to the fourth stage of data collection.

The study was conducted in a public hospital specializing in neonatology, clinical and surgical pediatric care of medium and high complexity, as part of the health care network of the Unified Health System. The staff consisted of 534 professionals; 258 were part of the nursing team, with 194 (75.1%) nursing technicians and 64 (24.8%) professional nurses, totaling 36.3% of hospital employees.

According to the institutional database, nursing is represented by the Director of Nursing, who is responsible for the regulation of the team's work process, and who is subordinate to the General Director[8]. In the organizational chart of the hospital, the nursing service is composed of the director of nursing and the intermediate managers: a general coordinator, six nurse coordinators of care areas, and four nurses from administrative areas. Of the 12 nurses invited to participate in the survey, nine agreed.

Data were collected from April to June of 2012. Data collection led to the exploration of the problem, and the proposition of actions to confront it in a participatory way[6]. To guarantee anonymity, participants were encoded with the letter "E", followed by sequential Arabic numerals from one to nine. Data collection was organized into four phases. In Phase 1, nurses answered a semi-structured questionnaire with topics related to management activities performed, supports and difficulties for performing work, and the management instruments used. In Phase 2, these results were shown in LP format and denominated seminars.

This phase consisted of eight seminars, consisting of 14 hours and 30 minutes. The decision-making process was among the management instruments defined by the group to deepen discussions. The decision-making model, as well as the action plan for its use, was developed in the seminars in Phase 3. Phase 4 included the assessment and validation of actions the nurses identified as necessary for using the developed decision-making, as an instrument for management activities.

Data were analyzed using the Content Analysis technique, in the thematic modality. This analysis technique had the purpose of performing deductions from the nurses' statements extracting the cores of meanings or significations, classifying them into categories. The process was divided into chronologically organized phases: pre-analysis, material exploration, treatment of results, inference and interpretation. The pre-analysis consisted of organizing ideas for systematic analysis of the material and represented the intuition period, when the hypotheses and goals that have to be achieved are developed, documents are selected, as well as indicators being developed to support the final interpretation[7].

The group of documents examined constituted the corpus of the data represented by the nurses' statements, and were transcribed verbatim and subjected to a process of analysis that primarily received a floating reading until the content was gradually incorporated. The raw data were systematically transformed and aggregated in units representating the content, a procedure called encoding. Thus, the data processing classified them into categories that met the text elements (registration unit), providing a common title for all. The frequency of appearance of extracted themes defined the analyzed units, or their core categories and subcategories[7].

The project was approved by the Research Ethics Committee of the Health Science Sector of the Federal University of Parana, protocol number CAAE 0116.0.091.429-11.

RESULTS

Nurse managers were young, aged between 25-40 years old, with little management experience, with the time in this activity between one and three years. The categories and subcategories that emerged from the record units extracted from the nurses' statements related to the decision-making process and decision-making will be presented in the following text, using lower case in bold and lower case in italics, respectively.

Three categories were identified, each one with subcategories. The first concerns the current situation of decision-making, shown in Table 1 and the second refers to the collective construction of decision-making, shown in Box 2.

In Box 1, the first category shows the professional training, low maturity for confronting situations of conflict and decision-making under pressure, characteristics that demonstrate the lack of preparation in particular and individual dimensions of the decision-making reality.

The second category, presented in Box 2, is related to the collective construction of the decision-making process. According to the nurses, this process is composed of stages, and is presented as sub-categories, which are: knowledge of the problem, defining the actors involved, creating a governing body internal collegiate, evaluating and monitoring the plan's implementation action.

The third category presents instruments to support decision-making. The management instruments indicated, as most commonly used during the decision-making process, were: time management, autonomy, conflict mediation and negotiating, as follows:

> *In the practice, today, they are indispensable in the decision-making* [...] *in my practice I have a short time to deliver documents.* (E 4)

Box 1 - Presentation of the first category and subcategories, Curitiba, Paraná, Brazil, 2012

Categories	Subcategories	Record units
Current situation of decision-making	The decision-making process in the hospital is not standardized.	*I just make some things in a non-structured manner. I try to analyze the data, think about what outcome I want to achieve, but I just decide intuitively, in an amateur way. (E3)*
	Lack of preparation to decide.	[...] In our professional training we are prepared to manage the care; here within the institution we are responsible for sector management, health staff and the nursing staff. (E3)
	Loss of credibility for decision-making.	*We have to take some decisions, but I do not have the autonomy to say if it will happen or not; in the end there is a hint of what could have been done [...] then the decision comes out as a sector decision, but it is not what we decided [...] the result is not what was expected and we lose credibility as a professional; it is frustrating in the daily routine. (E3)*
	Autonomy and deliberative spaces.	*You go to the meeting and it is decided there, even if most of the time we throw the problem away and leave. (3 E)*

Box 2 - Presentation of the second category and subcategories, Curitiba, Paraná, Brazil, 2012

Categories	Subcategories	Record units
Collective construction of the decision-making process.	Knowledge of the problem in all of its multiple facets	*The first step is to know the type, the extent of the problem. (E 4)* *First, define the problem, and then, you can get the right decision. (E 5)*
	Defining the actors involved	*If you do not get people who know the process, there is no work quality. (E2)* *First the problem and criteria, and then the actors; if an increase of 50% of ICU beds is proposed, as a criterion, I need to discuss it with area personnel [...] the actors. (E 1)*
	Creating a deliberative space.	*There (governing body) the issues would be checked before getting to the Management Committee. (E 6)*
	Evaluation and monitoring of the implementation of the action plan	*You've got to have someone to, when the situation is not going satisfactorily, to charge people. (E 1)*

> *Autonomy and time management and, if we have a day to solve, we have to manage it, in one day to be able to do all the the decision making process cycle. We need the autonomy to decide, and then the next step is planning.* (E3)

In finalization of the decision-making design, a schematic figure was introduced to the group, as a result of discussions (Figure 1). Then, in the last seminar, the model was discussed and validated. According to the group, the model meets the needs of its working context and can support decision-making with quality decisions.

DISCUSSION

Due to the specificities of the findings, the principal approaches or decision-making process strategies used within organizations, such as limited rationality, political perspective and the "*garbage can model*"[9-15] are used in the discussion.

On the first category that emerged in the results, he conventional economic theory claims that in the journey of becoming economic, the man is also rational[10]. The sub-category knowledge of the problem reflects the need of the decision-maker to own the full knowledge of the conditions of his choice, the exact consequences of each specific alternative, which leads him to achieve an optimal condition for the decisions. However, changes in the business company theory resulted in doubts as to whether this model provides adequate support for decision-making organizations. The analysis of this model identifies discrepancies and fragilities, and suggests an approach that considers the limitations of human rationality[10].

The second sub-category, lack of preparation to decide, shows that this can interfere, since in the decision-making process, the alternatives are chosen depending on the decision-maker's value system[16]; the decision-making model consists of three main phases: identification of time to make the decision, situation analysis, and choosing the best alternative for the moment. However, the decision is considered correct only when considering the appropriate means to achieve specific purposes, representing the best solution in that unique situation[11].

The nurse participant in this research indicates that he is not prepared to decide, since in his educational development, investment in the management of care prevails. This aspect should be considered rationality, as it is defined as the ability of man, based upon reason, to choose between different alternatives and judge all the risks of this choice[17].

A factor that appears in the statements as a consequence of the context is the loss of credibility in decision-making. The human rationality, however, operates within the limits of a psychological environment that requires a selection of factors in which the individual should base his decisions. In this context, there is the influence of the behavior of decision-makers and the hierarchical structure of the decision-making[11].

The results show the need that nurses feel for having autonomy and deliberative spaces in practice. This brings to the surface the importance of organizations appeasing the decision maker, with a psychological environment that favors that decisions made are in line with organizational objectives[11].

The problems are composed of elements of valuation (value judgments for the purposes of choice) when decisions lead to selection of the most current, factual goals (factual judgment), when the decisions are implied in implementing these purposes. This condition demonstrates a hierarchy for the decision-maker in the decisions regarding these elements, as steps toward achieving the objectives will be taken, according to the degree of importance, in descending order[11].

Thus, the ability, values and knowledge employed by the decision-maker focus on the administrative efficiency of organizations. These elements are denominated limits of rationality

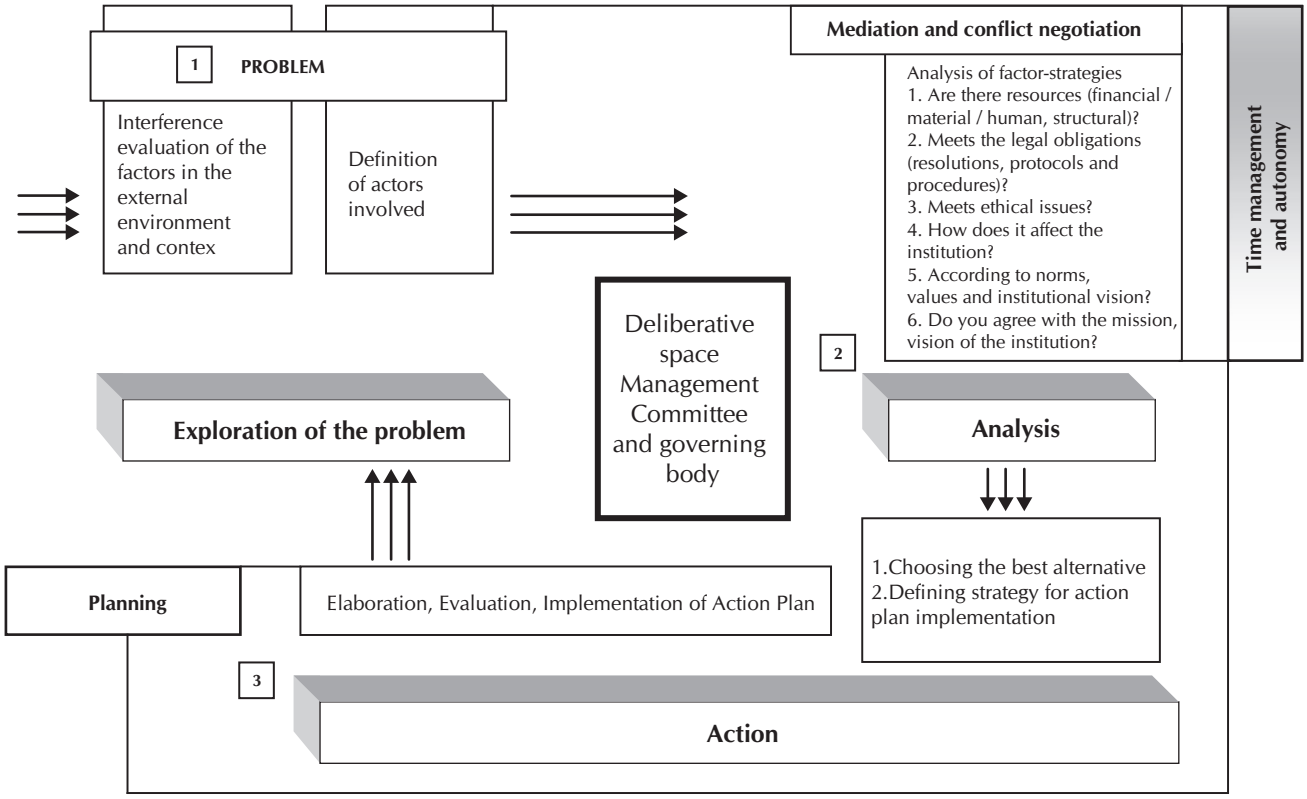

Figure 1 - The decision-making process designed by nurse managers

and behave like moving boundaries (*bounded*) which move depending on the situation, making it impossible to apply all of its capacity to the decisions, becoming ineffective. The system is one of stimulus-response, namely, the mechanism of continuity: compel the individual to maintain his decision-making behavior in that direction, the stimulus by definition of that activity, and the time spent invested in that decision line seems to be more resolute than the choice between alternative[12].

The approach proposed by Simon[10-13], the theory of rationality, brings issues that can lead to better understanding of how decisions happen to the field of discussions of the decision-making process.

Another contribution of rationality theory[13] is the understanding of mechanisms used by human rationality to deal with the complexity of problems, such as: recognition; the ability the decision-maker has to retrieve from memory data that help to solve recent problems; the process of heuristic search, which happens when the acknowledging of the situation is not immediate, but by selective search based on structural information, the decision-maker seeks a good solution to the problem by comparing differences of the experienced situation with the current one; and finally, the decision-maker's ability to find sequential patterns of information of organization, accessed when necessary.

The decision- making model presented in seminars to guide the discussions on the subject is formed by standardized steps, beginning with problem identification, selection of two or more alternatives for resolution, and further evaluation[18]. However, this research showed two important results, the first was ignorance, on the part of these nurses, of a process of systematic decision-making; and the second - the model designed for them - showing characteristics of sequential model of decision-making. Although this model seems to be capable of meeting the needs of the reality of their work, important aspects related to the context and actors (participants) in the decision-making process were neglected.

Nurse managers expressed the need to evaluate the external and internal interference of the problem and define the actors involved in its resolution (Figure 1). However, the classical conception of order in decision-making is formed by ideas closely related to the single reality of the objective world, structured by a chain of causes and effects, with intentionality guided by the preference of each individual. The situations and individuals are constantly changing, which obscures the interpretations of reality[16].

The confusing world of ideas that decision-makers face is not systematically organized, but is rather ambiguous and symbolic. This effect is explained by the characteristics of ambivalent decision-makers who express their preferences, identities, experiences and meanings. Therefore, when some groups of decision-makers are gathered, common meanings as a basis for decision-making should be established, and not only to group information about the issue. With this precaution, disconnected and ineffective decisions can be avoided[14].

As the criteria for problem analysis are multiple and ambiguous in nature, the concepts portrayed by the sequential model theory seem to underestimate the complexity of the decision-making process in the present. Nurses and mid-level

managers are responsible for managing human resources, materials, equipment, and cost information. Currently, these professional participate in the management committee, at the moment of decision-making related to the sectors they manage. In this space, strategic decisions are shared with upper management. Since this is the only deliberating space, these nurses propose a moment of intermediate discussion for maturation of proposals as they are made in an internal council.

The political strategies of the decision-making process indicate that the central aspects of decision-making are rational processes, however, the exponents political models of decision- making reject the idea that members of the organization make rational decisions. Organizations are composed of different groups, driven by actors with varied interests who practice political tactics to influence decisions that affect their positions in the organization. The political behavior of actors increases the uncertainty of decision-making, as it is contrary to its formal rules and may even subvert them[14].

The major forms of political intervention in decision-making arise from hierarchical power, financial control needed to implement the strategic decisions, and the influence on and the power of veto. The group of decision-makers is influenced in the decisions they make by public policies and domestic interests. Therefore, decision-makers need skills and technical knowledge to combine divergent interests and appropriate solutions. In these cases, open discussions on political issues have more effect on the results than an attempt to force the decision through the use of power, or to make a decision based on misinformation due to political artifice[19].

The use of power contributes to conflicting situations in the processes and working relationships. Although there is a formal discourse that nurse managers have autonomy to make decisions related to their work, in the professional practice, nurses confront organizational barriers, a portrait of a political system in which senior managers have partially conflicting goals. In this environment, decision-making appears as interlaced processes restricted by rationality and politics, in which the decision-maker that holds more power interferes with and determines the decision[1].

Thus, the context for the use of the sequential model of problem-solving cannot meet the work needs of nurses working in a public institution. Under the perspective of the *garbage can*[9], anarchic organizational models can be found in public and educational organizations. As characteristics of this model, decisions are inconsistent and poorly defined preferences; the actors vary in the amount of time and effort they devote to situations that are not in their domain area, the participation is fluid; production processes are not well understood by members of organization, the work is done based on trial and error. To meet the environment with this degree of uncertainty, the *garbage can* model indicates flows to deal with problems; the decisions result from multiple events rather than an orderly process. Organizations tend to produce solutions discarded in the "garbage can" by the absence of problems; when problems arise, it is in the "garbage can" that solutions are sought until one fits the needs of the situation[9].

However, a decision can be good or bad for the organization, depending on the facts and the ethical elements that compose it. A good decision carries a moral sense to the decision-maker, who shall select one alternative rather than another. The chosen alternative does not fully satisfy the desired objectives, as it represents only the best solution found in that circumstance. Selectively, the decision-maker chooses according to his beliefs and values, evidence that decisions are relative. The decision may not represent the ideal solution. In these cases, it is recommended that the rules and regulations of the organization (not ethical character), are clear and well defined by upper management, as they will be the limitations necessary for decisions[11].

The existence of cognitive limits in the rationality paradigm was identified in a study on decision-making. The basic cycle that decisions follow to solve the problem begin with identifying, advance to development, and alternative choice is broken according to the complexity of the problem. The conflict between decision-makers influence the manner of decision-making. From the analysis of the study, the authors concluded that the decision-makers are rational in some respects, but not in their entirety, a result that contrasts with the classical view of rationality[17].

The decision-making process is a phenomenon with multiple facets, that in addition to the decision-makers involves the decision type, and the method by which the decision is processed, the characteristics of defined actions, the context or environment of choice, and the desired results[5]. Given the complexity of the decision-making process, the decision-maker needs some preparation for confronting it. Therefore, another result of this research refers to reflections on management education for nurses.

The third category shows that the management instruments used to support the decision-making process are: time management, autonomy, conflict mediation and negotiation. A study, published in 2011, revealed that nurses have difficulties making decisions in a systematic manner[3].

The development of skills for professional practice in health and nursing starts in academic life. Efforts of educational institutions and training courses are conducted so that the construction of this knowledge interacts with the daily work, and promotes reflection based on the experienced reality. It is clear, however, that there is a mismatch between the training received and what is expected of the professional in terms of hospital management performance[18]. Nurses reported difficulty in articulating the knowledge of the decision-making process and its application in practice[3].

In this situation, one subject scholars reviewed was that universities do not instruct the student in ethical and effective practice. In this process, two questionable assumptions are used by universities to develop their credibility and legitimacy. One, already stated, refers to the idea that students are not prepared for professional practice; the other is the fact that academic research does not provide useful knowledge. The author proposes a practice epistemology, structured to promote reflective learning, resulting from the interaction between teacher and student, developed through dialogue, counseling, criticism, explanations and teacher performance. As a result, learning is replaced by a direction in which the professional acquires substantive understanding of the process that focuses on developing reflective behavior, consistent

with the practice, regardless of the organizational context into which the professional is integrated[15].

FINAL CONSIDERATIONS

This study aimed to analyze the decision-making model developed by nurse managers, with the methodological guidance of action research. Action research, and participatory construction of the logical framework, proved to be suitable as they allowed the identification of the model adopted as a support for nurses' decision-making, which neglects the limitations of rationality and interferes with the effectiveness of decisions.

Nurses showed a lack of clarity of decision-making as a resource that, when perceived, facilitates and contributes to the achievement of organizational objectives. The results suggest the need to apply management theory models to support the decisions of nurse managers, and thus achieve effectiveness in the results of their decisions. Development of research with other groups of nurse managers to improve the proposed model is necessary.

The discussions and reflections on the decision-making process and decision-making in the hospital setting need to be achieved by the educational institutions so that there is better preparation of professionals regarding the decision-making process.

FUNDING

We thank CAPES (PDSE Case no. 010 195 / 2014-09) and the Araucaria Foundation.

REFERENCES

1. Effken JA, Verran JA, Logue MD, Hsu YC. Nurse manager's Decisions: fast and favoring remediation. J Nurs Adm [Internet]. 2010 Apr [updated 2015 Jun 19; cited 2012 Jun 04];40(4):188-95. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2880498/pdf/nihms198541.pdf
2. Ciampone MHT, Melleiro MM. O planejamento e o processo decisório como instrumento do processo de trabalho gerencial. In: Kurcgant P. Gerenciamento em enfermagem. Rio de Janeiro (RJ): Guanabara Koogan; 2010. p. 35-50.
3. Almeida ML, Segui MLH, Maftum MA, Labronici LM, Peres AM. [Management tools used by nurses in decision-making within the hospital context]. Texto & Contexto Enferm [Internet]. 2011 [cited 2012 Jun 04];20(Spec No):131-7. Available from: http://www.scielo.br/pdf/tce/v20nspe/v20nspea17.pdf Portuguese.
4. Simon HA. The new science of management decision. New York: Harper and Row; 1960.
5. Nutt PC. Making decision-making research matter: some issues and remedies. Management Research Review [Internet]. 2011 [updated 2015 Jun 19; cited 2012 Jun 04];34(1):5-16. Available from: http://www.emeraldinsight.com/doi/pdfplus/10.1108/01409171111096441
6. Thiollent M. Pesquisa-ação nas organizações. São Paulo: Atlas; 2009.
7. Bardin L. Análise de conteúdo. Lisboa (PT): Ed 70; 2010.
8. Hospitalinfantil.saude.pr.gov.br [Internet]. Campo Largo (PR); Hospital Infantil Waldemar Monastier; 2014 [updated 2015 Feb 13; cited 2012 Jun 04]. Available from: http://www.hospitalinfantil.saude.pr.gov.br/arquivos/File/organograma_2014_v13.pdf
9. Cohen MD, March JG, Olsen JP. A garbage can model of organizational choice. Adm Sci Q [Internet]. 1972 Mar [updated 2015 Jun 19; cited 2012 Jun 04]:17(1):1-25. Available from: http://www.jstor.org/stable/2392088?seq=1#page_scan_tab_contents
10. Simon H. A Behavioral model of rational choice. Q J Econ [Internet]. 1955 Feb [updated 2015 Jun 19; cited 2012 Jun 04]:69(1):99-118. Available from: http://www.jstor.org/stable/1884852?seq=1#page_scan_tab_contents
11. Simon HA. Administrative behavior: a study of decision-making process in administrative organizations. 4th ed. New York: The Free Press; 1997.
12. Simon HA. Comportamento administrativo. 2. ed. Rio de Janeiro (RJ): FGV; 1971.
13. Simon HA. Prediction and prescription in systems modeling. Oper Res [Internet]. 1990 Feb [updated 2015 Jun 19; cited 2012 Jun 04];38(1):7-14. Available from: http://pubsonline.informs.org/doi/abs/10.1287/opre.38.1.7
14. March JD. A primer on decision making how decision happen. New York: The Free Press; 1994.
15. Schön DA. Educando o Profissional Reflexivo: um novo design para o ensino e aprendizagem. Porto Alegre: Artes Médicas Sul; 2000.
16. Becker JL, Freitas H, Hoppen N, Kladis CM. Informação e decisão: Sistemas de apoio e seu impacto. Porto Alegre: Ortiz; 1997.
17. Eisenhardt KM, Zbaracki MJ. Strategic decision making. Strategic Management Journal [Internet]. 1992 Winter [cited 2012 Jun 04];13(Spec 2):17-37. Available from: http://onlinelibrary.wiley.com/doi/10.1002/smj.4250130904/epdf
18. Marquis BL, Huston C. Administração e liderança em enfermagem: teoria e prática. 6. ed. Porto Alegre (RS): Artes Médicas; 2010.
19. Child J, Elbanna S, Rodrigues SB. The political aspects of strategic decision making. In: Nutt PC, Wilson D, editors. The handbook of decision making. Chichester: Wiley-Blackwell; 2010. 105-37 p.