

Original Article

NURSING DIAGNOSIS AND ROY'S THEORETICAL MODEL IN PROSTATECTOMIZED PATIENTS

DIAGNÓSTICOS DE ENFERMAGEM E MODELO TÉORICO DE ROY EM PACIENTES PROSTATECTOMIZADOS

DIAGNÓSTICOS DE ENFERMERÍA Y MODELO TEÓRICO DE ROY EN PACIENTES SOMETIDOS A PROSTATECTOMÍA

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A descriptive study aimed at identifying the profile of NANDA International nursing diagnoses in patients in the immediate postoperative prostatectomy and relates them to adaptive problems of the Roy Adaptation Model. Conducted in a university hospital in the Northeast of Brazil, between November, 2010 and April, 2011, with a sample of 50 subjects. The collected data were through interviews and physical examinations, with subsequent analysis by means of clinical reasoning. These relations were found: risk of falls and potential injury; impaired ambulation and mobility to walk and/or restricted coordination; self-care deficits and loss of ability to selfcare; acute pain and acute pain; insomnia/impaired sleep patterns and sleep deprivation; constipation and constipation. Therefore, most of the nursing diagnoses identified are similar to adaptive problems according to Roy.

Descriptors: Nursing Theory; Nursing Diagnosis; Prostatic Hyperplasia; Prostatectomy.

Estudo descritivo, cujo objetivo foi identificar o perfil dos diagnósticos de enfermagem da NANDA Internacional nos pacientes em pósoperatório imediato de prostatectomia e relacioná-los com problemas adaptativos do Modelo de Adaptação de Roy. Realizado em um hospital universitário do Nordeste do Brasil, entre novembro/2010 e abril/2011, com amostra de 50 indivíduos. A coleta ocorreu por meio de entrevista e exame físico, com posterior análise por meio do raciocínio clínico. Foram encontradas as relações: risco de quedas e potencial para lesão; deambulação prejudicada e mobilidade andar e/ou coordenação restritos; déficits no autocuidado e perda de habilidade para o autocuidado; dor aguda e dor aguda; insônia/padrão do sono prejudicado e privação do sono; constipação e constipação. Portanto, a maioria dos diagnósticos de enfermagem identificados são similares aos problemas adaptativos segundo Roy. Descritores: Teoria de Enfermagem; Diagnóstico de Enfermagem; Hiperplasia Prostática; Prostatectomia.

Estudio descriptivo, con objetivo de identificar el perfil de los diagnósticos de enfermería internacional NANDA en pacientes en postoperatorio inmediato de prostatectomía y relacionarlos con los problemas de adaptación del Modelo de Adaptación de Roy. Llevado a cabo en hospital universitario en Nordeste de Brasil, entre noviembre/2010 y abril/2011, con muestra de 50 individuos. Los datos fueron recolectados a través de entrevista y examen físico, con posterior análisis por medio del razonamiento clínico. Fueron encontrados las relaciones: riesgo de caídas y posibles lesiones; alteración de la deambulación y la movilidad a pie y/o coordinación restringida; déficits de autocuidado y pérdida de la capacidad de autocuidado; dolor agudo y dolor agudo; patrones de insomnio/sueño y privación del sueño con discapacidad; estreñimiento y estreñimiento. Por lo tanto, la mayor parte de los diagnósticos de enfermería identificados son similares a los problemas de adaptación de acuerdo con Roy.

Descriptores: Teoría de Enfermería; Diagnóstico de Enfermería; Hiperplasia Prostática; Prostatectomía.

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INTRODUCTION

Urological problems have been highlighted in the surveys due to the increase of cases which affect the world population. Among these problems, the main ones are those related to the prostate, specifically the benign prostatic hyperplasia (BPH) and the prostate cancer. The BPH is a common affection among man who are older than 60 years and, from each group of 100,000 men, 30 die because of this disease⁽¹⁾. The prostate cancer, a neoplasia prevailing in the male population⁽²⁾, is the sixth most common type of cancer in the world, representing around 10% of the total number of cases of cancer. Its incidence rate is about six times higher in developed countries compared to countries under development.

The treatment of both the diseases has the objective to improve the quality of the patient and to provide relief of their signs and symptoms, which are: a feeling of incomplete emptying of the bladder, weak and intermittent urinary stream, terminal dropping, nocturia, urinary urgency, among others⁽¹⁾. Therefore, the options of treatment will depend on the clinical status presented by the patient. Thus, the therapeutical treatment can vary between the conservative behavior, such as observation and medical treatment, and the surgical procedures, such as the transurethral incision of the the transurethral the prostate, resection and prostatectomy $^{(1,3)}$.

The prostatectomy, a procedure of removal of the prostate, considered as the best surgical intervention in the long term range, improves the symptoms presented in 90% of the cases and, besides that, it has the lowest rate of reoperation. However, because it is more invasive, it is almost always followed by hemorrhage and other complications^(1,3).

In this context, the nursing team has the responsibility to assist the prostatectomized patient, both in the physical as well as in the psychological aspects, for it is know that prostatectomy commonly provokes complications, such as urinary incontinency,

erectile dysfunction and hemorrhage. These side effects, especially the first two, generate feelings of inutility on the subjects who have gone through this procedure and also the lack of control of their lives⁽⁴⁾.

Facing these facts, it is observed that there is the need for better organization and systematization of the nursing care to those patients. For that, the Nursing Process (NP) is highlighted as an effective nursing tool for such organization. A methodology which influences in the quality of the care, once it is performed in a systematic manner, it defines the needs of the patient, orientates the assistance and records the results obtained with the surgery performed⁽⁵⁾.

Furthermore, the nurse needs to follow the NP under the context of a theoretical referential, besides working with standardized systems of language, both for the nursing diagnoses (ND) as well as for the results and interventions, having the objective to promote a care of better quality.

Regarding the diagnoses, results and interventions, the *North American Nursing Diagnosis Association International* (International NANDA)⁽⁶⁾, the Classification of the Nursing Results (CNR) and the Classification of the Nursing Interventions (CNI) are the most divulged and applied systems of classification worldwide⁽⁷⁾.

Supporting these systems of classification, some theories have contributed for the development of the nursing knowledge, in order to help in the strengthening of the practice. Among them we highlight the Adaptation Model⁽⁸⁾ by Sister Callista Roy associated to the prostatectomized patient, due to the fact that such patient commonly presents feelings of impotence and inutility of this life in the post-operative period. So, such model has the objective to adapt these patients to the situations of life.

According to the Adaptation Model, the patient is considered a holistic system, which emits adaptive or

inefficient responses, in four manners: physiological, self concept, performance of roles and inter-dependence. The physiological manner covers five basic needs of physiological integrity: oxygenation, nutrition, elimination, activity/rest and protection; and four complex processes: sensitive, liquid-electrolyte, neurological function and endocrinal function⁽⁸⁾.

The manner of self concept covers psychological and spiritual aspects that the person keeps about herself. It has two components: physical I, which includes the sensation and the corporal self image, and personal I, which comprehends the consistence I, ideal I and ethical-moral-spiritual I. The manner of performance of roles identifies the patterns of social interaction of the person in relations to the others. And the manner of inter-dependence has the focus on related interactions regarding giving and receiving affection, respect and value⁽⁸⁾.

So, the care of nursing visualized from the view of the Roy's Adaptation Theoretical Model makes an effective work possible, in which the objectives are the reestablishing and/or the maintenance of the balance, being possible to relate them to the necessary interventions.

Therefore, mind that the keeping in prostatectomized patient presents changes in his daily life originated by the procedure, and for this reason will, at first, emit inefficient responses, it is important that the main problems of nursing are traced under the light of Roy's Adaptation Model and of the taxonomy of NANDA International, in order to subsidize the directing of the planning of assistance of nursing, contributing to a better adaptation of the patient to a new style of life, besides providing the scientific strengthening of the nursing.

So, the present study is necessary in order to find the main problems presented by the patients in a condition of post-operative prostatectomy, and to understand the different needs presented by the prostatectomized patient, taking into consideration his adaptation to a new style of life in order to contribute to a planning of a more effective and efficient assistance. Besides that, it shows the applicability of the Model coadunate with NANDA International, offering the nurse subsidy for the nursing care from the analysis of the behavior of the prostatectomized patient. And, in the end, it contributes to the construction of knowledge and aggrandizement of the profession as science, once the use of the theories provides scientific foundation for the performance of the nursing clinical care.

Consequently, the following questionings came up: Which diagnosis of nursing are shown in patients in the immediate post-operative of prostatectomy? Is there any relation between the identified diagnoses and the adaptive problems of Sister Callista Roy's Adaptation Model?

Thus, the study allowed to identify the profile of the diagnoses of nursing of the NANDA International in the patients in the immediate post-operative of prostatectomy and relates them with adaptive problems of Roy's Adaptation Model.

METHODS

This is a transversal study with descriptive character made in surgical clinic of the university hospital of a capital city in the Northeast of Brazil, which is a tertiary reference for all the state, it has 185 beds, distributed in the sectors of intensive care unit, transplant and wards. The specific place of the data collection was the urological ward and wards of other specializations, where, by chance, there were patients who had been submitted to prostatectomy.

The surveyed population was made by 102 patients with BPH or prostate cancer, hospitalized in the above mentioned hospital in immediate post-operative prostatectomy. This population was taken from a computerized system of the referred hospital, from August 1st, 2009 to July 31, 2010. The sample was

determined based on a formula developed by studies with finite populations, which considers the coefficient of confidence, the sample error and the size of the population⁽⁹⁾. Therefore, the following items were considered as parameters: coefficient of confidence of the study of 95%, sample error of 10%. Due to the lack of studies which could estimate the prevalence of the adaptive problems of the Adaptation Model of this population, a conservative value of 50% was considered. So, after the use of the formula, a sample size of 50 subjects was found.

The criteria of inclusion in the study were the following: to have a medical diagnosis of benign prostatic hyperplasia or prostatic neoplasia; to be in post-operative situation up to 48 hours after the prostate surgery at the moment of the data collection. And the criteria of exclusion were: to be in physical and mental conditions which would make the participation in the survey unfeasible; prostatectomized patient with advanced cardiovascular diseases, advanced lung disease, progressive hepatic disease or extended peripheral disease, once such affections can present signs and symptoms which interfere in establishing the true profile of diagnosis of nursing of this population.

The data were collected from November 2010 to April 2011, through a script of interviews and physical exams. The interview covered the following variables: sex, age, marital status, number of children, origin, family income, occupation, years of education, religion, alcoholism, smoking, preventive periodic exams, year of diagnosis of the disease, urinary obstruction, nocturia, feeling of incomplete emptying of the bladder, dysuria, difficult to start urination, increase of the urinary frequency, urinary urgency, weak or interrupted urinary stream, hematuria, bone pain and loss of weight.

To do the physical exam, four propaedeutic methods of evaluation were used: inspection, palpation, tapping and auscultation, in the brain-caudal direction, in order to identify each segment of the body (head,

neck, cardiopulmonary system, abdomen, limbs and neurological system).

After the collection, the data analysis started, which happened through clinical reasoning. For such, diagnoses of nursing were traced according to NANDA International ⁽⁶⁾ and the adaptive problems of Adaptation Model were identified⁽⁸⁾, with a later comparison between both diagnoses, in order to establish relations of similarity. The diagnosis process was made through two phases: analysis (data categorization and identification of gaps) and synthesis (grouping, comparison, identification and relation of the etiological factors)⁽¹⁰⁾.

After that, a data bank was established in the *Microsoft Excel* application and, with the help of the statistical program SPSS (Statistical Package for the Social Sciences) version 16.0, the sociodemographic data and nursing diagnosis identified were processed and analyzed with the help of descriptive statistics being presented through relative frequency. The texts of association were applied only for nursing diagnoses which were above Percentile 50, once they presented higher frequencies. The data presentation was made with a chart, with later discussion based on the pertinent literature.

The study respected the ethical precepts, according to Resolution $196/96^{(11)}$, being approved by the Committee of Ethics in Survey, under Protocol no. 130/10 and Certificate of Presentation for Ethical Appreciation (CAAE) n° 0147.0.051.000-10.

RESULTS

Next, the data of sociodemographic characterization will be approached, the nursing diagnoses of NANDA International and the relation between these and the adaptive problems of the Adaptation Model in prostatectomized patients.

Among the surveyed men, the average age was 67.78 years (\pm 8.286), 80% had partners, 90% lived in

countryside towns of Rio Grande do Norte and the family income varied from zero to eight minimum wages, prevailing the retired subjects (60%). As to education, 44% were illiterate and 40% had incomplete grade school.

Regarding the identification of profile of nursing diagnoses of the NANDA International found in the surveyed population, a total of 28 diagnoses were established: Risk falls of (100%), Jeopardized ambulation (100%), Risk of infection (100%), Deficit in the self care for bathing (100%), Deficit in the self care for intimate hygiene (100%), Deficit in the self care for dressing (100%), Risk of deficient volume of liquids(94%), Acute pain (36%), Insomnia (26%), Deficient knowledge (20%), Jeopardized dentition (18%), Constipation (16%), Jeopardized pattern of sleeping (16%), Jeopardized comfort (10%),

Dysfunctional Gastrointestinal Motility (6%), Integrity of skin jeopardized (6%), Jeopardized deglutition (6%), Risk of constipation (6%), Volume of excessive liquid (4%), Disorder in the body image (4%), Fatigue (4%), Fever (4%), Jeopardized Social Interaction (2%), Risk of solitude (2%), Risk of instable glycemia (2%), Unbalance nutrition: less then the body needs (2%), Low situational self esteem (2%), Acute confusion (2%).

The above mentioned nursing diagnoses were traced through clinical reasoning from data collected in the interview and in the physical exam. These will be exposed in Chart 1 to follow, however, only the diagnoses which are above the percentile 50, which represent the diagnoses with higher relative frequencies, will be presented below and related with Roy's adaptive problems.

Chart 1 — Relation of the nursing diagnoses of NANDA International, above the percentile 50, and the adaptive problems of the Adaptation Model identified in patients submitted to prostatectomy. Natal/RN, Brazil, 2013

| Nursing diagnoses – NANDA International | | Mode of Roy's adaptive problems | Roy's adaptive problems |
|---|------|---------------------------------|---|
| Risk of falls | 100% | | Potential for lesion |
| Jeopardized ambulation | 100% | | Restricted mobility and/or coordination |
| Deficit in the self care for bathing | 100% | Physiological Mode | Loss of ability of care |
| Deficit in the self care for intimate hygiene | 100% | | Loss of ability of self care |
| Deficit in the self care for dressing | 100% | | Loss of ability of self care |
| Acute pain | 36% | | Acute pain |
| Insomnia | 26% | | Sleep privation |
| Constipation | 16% | | Constipation |
| Jeopardized pattern of sleeping | 16% | | Sleep privation |

When relating the nursing diagnoses of the NANDA International to the adaptive problems proposed by the Adaptation Model, 9 out of the 13 nursing diagnoses presented above of the percentile 50 were analyzed because four nursing diagnoses of the NANDA International (Risk of infection, Risk of insufficient volume of liquids, Insufficient knowledge and Jeopardizing dentition), did not have a relation of similarity with the adaptive problems of the Adaptation Model.

Furthermore, among the four adaptive modes within the Roy's adaptation model – physiological, self concept, performance of roles and inter-dependence – only the problems within the physiological mode had a relation with the nursing diagnoses above the percentile 50 traced for this population, there was no relation with the other modes. So, it was evident, in this study, that the patients in the immediate post-operative presented predominantly problems related to their basic needs and to the complex processes of this adaptive mode.

DISCUSSION

Regarding the sociodemographic profile of the surveyed population, they matched the studies made in patients who had been submitted to the surgery, once it was observed that the average age of the surveyed people was around 65-66 years, and most of them were married and retired. Regarding education, most patients presented low schooling⁽¹²⁻¹³⁾.

It is known that in Brazil illiteracy is still very high, corresponding to 14.1 million people, however, this rate decreased in 10 years, from 13.3% to 9.7%. the segments which were more affected by illiteracy are the people who are 60 years old or more (32.9%), the black people (10.2%) and dark-skinned people (58.8%), and 52.2% of these people live in the Northeastern region and survive with half a minimum wage⁽¹⁴⁾. Such data confirm the data obtained in this survey.

In addition, characteristics such as these, illiteracy and low family income, can make the understanding of the disease, the post-operative care, as well as the self care made by the patient more difficult⁽¹⁵⁾. Furthermore, the low income makes the access to the services of health difficult⁽¹⁶⁾.

As to the nursing diagnoses shown in Chart 1, such as Risk of falls, Jeopardized ambulation, Deficit in the self care for bathing, for intimate hygiene and dressing, they were present in all patients, once most of the surveyed patients were elderly, with peripheral venous access, continuous vesicle irrigation, besides being hospitalized in wards with to much furniture, little lighting and bathrooms without anti-slipping floor.

These diagnoses are particularly important in the elderly population, because the elderly are more vulnerable to physical and immunological lesions, due to the decrease of the functional reserve, characterized by the aging process which can be aggravated and accelerated by the presence of multiple chronic degenerative diseases⁽¹⁷⁾. Besides that, such diagnoses were present because the patients in post-operative

prostectomy generally use several hospital devices such as, the support for the serum, venous access, vesicle probe, collector bag of urine and drains, besides the surgery itself which makes ambulation and self care difficult and they increase the risk of infection.

Regarding the similarities between the nursing diagnoses of NANDA International and the adaptive problems of the Adaptation Model, according to what is presented in Chart 1, from the four modes analyzed; only the problems within the physiological mode presented a relation with those of NANDA International.

The physiological mode corresponds to the surrounding incentives to the human body and it involves basic needs of physiological integrity and complex processes, as stated previously. In this study, the relation between the nursing diagnoses and two basic needs of the physiological were identified: activity/rest and elimination. The complex process 'senses' had more relation, presenting five of the nine adaptive problems, and they are: Potential for lesion; Loss of ability for the self care for the three categories: bathing, intimate hygiene and dressing; and Acute pain.

So, the adaptive problem 'Potential for lesion' establishes a relation with the nursing diagnoses Risk of falls of Taxonomy II of the NANDA International. This diagnosis is within the domain 11 (Security and Protection) and in class 2 (Physical Lesion), being defined as an increase susceptibility for falls which may cause physical damage^(6,8). It was noticed that the adaptation problem 'Potential for lesion' is within the complex process 'senses' and not in the complex processes 'protection' described by Roy, which makes a relation with the domain security/protection of the NANDA International, thus generating a conflict in the choice of decision for association.

Still referring to the complex process 'senses', it was established a relation of the nursing diagnoses deficit in self care for bathing, intimate hygiene and

dressing of the NANDA International included in domain 4 (Activity and Rest), class 5 (Self care) with the adaptive problem loss of ability in the self care^(6,8). Just like the above mentioned diagnoses, the existence of divergence in the position of the terms was noticed, once this adaptive problem is a complex process different from the domain of nursing diagnoses of NANDA International, but, there is a similarity in the diagnoses labels.

The nursing diagnoses Acute pain found in domain 12 (Comfort) and in class 1 (Physical Comfort) of Taxonomy-II of NANDA International⁽⁶⁾ is related to the adaptive problem Acute pain which belong to the complex process 'senses'⁽⁸⁾. Both of them have the same nomenclature; however, there is not the basic need 'comfort' in the Adaptation Model, as well as the domains 'senses' in the Taxonomy II of NANDA International.

According to the Adaptation Model, the restricted adaptive problems of Ambulation and/or coordination and Privation of sleep are within the basic needs of physiological integrity, specifically in the domain activity and rest. The adaptive problem constipation is also within the basic needs; however, it is within the domain elimination⁽⁸⁾.

The restricted adaptive problem Mobility to walk and/or coordination⁽⁸⁾ can be associated to the diagnoses Jeopardized ambulation of the Taxonomy II of NANDA International. The jeopardized ambulation is defined as the limitation to independent moving, on foot, around the surroundings, and is found in domain 4 (Activity and Rest), in class 2 (Activity/Exercise)⁽⁶⁾. Therefore, a strong relation between both of them is noticed due to the similarity in their grouping of domain and in their definitions.

The adaptive problems Privation of sleep, within the domain activity/rest, established a relation with the diagnoses Insomnia and Patterns of jeopardized sleep within domain 4 (Activity/Rest) and class 1 (Sleep/Rest) of NANDA International^(6,8). In this association there is a similarity of the basic need described by Roy with the domain of the NANDA International, however, there is a certain differentiation in the nomenclature of the adaptive problems and diagnoses. In the Adaptation Model there is a potential adaptive problem for the disorder in the pattern of the sleep which is similar to the diagnosis of jeopardized pattern of sleep, however, this is a potential problem and not real, and there is no possibility to establish a relation.

The diagnosis 'Constipation' defined as the decrease of the normal frequency of evacuation, followed by a difficult or incomplete passage of feces and/or elimination of excessively hard and dry feces within domain 3 (Elimination and Change) and in class 2 (Gastrointestinal function) of Taxonomy II of the NANDA International. In the Model describe by Roy, the adaptive problem Constipation is inserted in the basic need elimination^(6,8). So, the similarity between the terms, both in the matter of entitling, as well as in the domain and basic need framed is clear.

In a survey about the relation between taxonomy of diagnoses of the NANDA International and of the physiological mode of the Adaptation Model, it was noticed that there are divergences between the typology written by Roy and the taxonomy of the NANDA International regarding the numeric aspect, once the typology proposed by Roy presents an inferior quantity of situations, however, there is a great similarity among some diagnosis labels, the domains and their denominations. Maybe this has happened as a consequence of the fact that Sister Callista Roy was a member of the NANDA from her first works⁽¹⁷⁾.

Consequently, the similarities are explicit between the diagnoses of the NANDA International and the adaptive problems of Adaptation Model proposed by Roy in the patient submitted to prostatectomy. However, there were some divergences regarding the positioning and the quantification of the terms and of the domains with the basic needs and complex processes between the Adaptation Model and the Taxonomy-II of the NANDA International.

CONCLUSION

The following relations between the nursing diagnoses of the NANDA International and the adaptive problems proposed by the Adaptation Model were: Risk of falls and Potential for lesion; Jeopardizing Ambulation and restricted Mobility to walk and/or coordination; Deficit in the self care for bathing, intimate hygiene and dressing and Loss of ability with self care; Acute pain and Acute Pain; Insomnia/Jeopardizing patters of sleep and Privation of sleep; and Constipation and Constipation. So, the similarity between the diagnoses stipulated by NANDA International and the adaptive problems proposed by Callista Roy is evident.

The acute pain and the constipation were the only diagnoses labels that showed identical synonymy, once they were found in both classifications with the same diagnosis titles. The other ones, although they did not have identical diagnosis labels, they had similarities regarding the meaning.

The conceptual association elucidated required a critical analysis of the adopted theoretical model, once this model presents different manners to establish the nursing diagnoses. It is believe that studies like this bring implications for the nursing practice, once they subsidize the direction of the planning of the nursing assistance from the traced problems, contributing to an improvement of the positive results reached in this population.

As limitation of the study, we identified the fact that the relation of the nursing diagnoses of the NANDA International with the adaptive problems of the Adaptation Model was made only for the diagnoses above percentile 50. Therefore, if the relation were identified for all the diagnoses traced, consequently, the

adaptive problems inserted in other mode of Roy's theoretical model could be contemplated.

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