



## Nursing diagnoses in hospitalized elderly, according to the International Classification of Nursing Practice

Diagnósticos de enfermagem para idosos internados, segundo a Classificação Internacional das Práticas de Enfermagem

Diagnósticos de enfermería para ancianos hospitalizados, según la Clasificación Internacional de las Prácticas de Enfermería

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**Objective:** to identify the nursing diagnoses characteristic of hospitalized elderly at the Medical Clinic of a university hospital in southern Brazil, according to the International Classification of Nursing Practice, version 1.0. **Methods:** it is a descriptive, cross-sectional study involving 24 elderly. **Results:** 158 nursing diagnoses were obtained gathered in 23 groups, grouped into 14 macro-groups presented by similarities: cardiovascular system, impaired self-care, compromised respiratory system, impaired locomotion system, risk of infection, altered dietary patterns and body weight, impaired endocrine system, altered gastrointestinal system, committed genitourinary system, altered neurological system, compromised perceptive system, sensorial system, altered cutaneous and hydric system and affected thermal regulatory system. **Conclusion:** the hospitalized elderly experienced physiological and pathological alterations and the gerontologist nurse can contribute with the planning aimed at maintaining the physical integrity of the elderly in an individualized and complete manner.

**Descriptors:** Aged; Nursing Diagnoses; Classification; Geriatric Nursing.

**Objetivo:** identificar os diagnósticos de enfermagem característicos de idosos internados na Clínica Médica de um hospital universitário do Sul do Brasil, segundo Classificação Internacional das Práticas de Enfermagem versão 1.0. **Método:** estudo transversal descritivo, realizado com 24 idosos. **Resultados:** obteve-se 158 diagnósticos de enfermagem congregados em 23 grupos, agrupados em 14 macrogrupos apresentados por similaridades: sistema cardiovascular, autocuidado prejudicado, sistema respiratório comprometido, sistema locomotor prejudicado, risco para infecção, padrão alimentar e massa corporal alterados, sistema endócrino prejudicado, sistema gastrointestinal alterado, sistema geniturinário comprometido, sistema neurológico alterado, sistema perceptivo comprometido, sistema sensorial, sistema tegumentar e hídrico alterados e sistema regulador térmico afetado. **Conclusão:** os idosos internados vivenciaram alterações fisiológicas e patológicas e o enfermeiro gerontólogo pode contribuir com planejamento de ações visando a manutenção da integridade física desse idoso de forma individualizada e integral.

**Descritores:** Idoso; Diagnóstico de Enfermagem; Classificação; Enfermagem Geriátrica.

**Objetivo:** identificar los diagnósticos de enfermería característicos de ancianos en la Clínica Médica de un hospital universitario del sur del Brasil, según Clasificación Internacional de Enfermería de las Prácticas versión 1.0. **Método:** estudio descriptivo transversal con 24 ancianos. **Resultados:** se obtuvieron 158 diagnósticos de enfermería en 23 grupos, agrupados en 14 macrogrupos presentados por similitudes: sistema cardiovascular, autocuidado perjudicado, sistema respiratorio comprometido, sistema motriz perjudicado, riesgo para infección, estándar alimentario y masa corporal alteradas, sistema endócrino perjudicado, sistema gastrointestinal cambiado, sistema genitourinario comprometido, sistema neurológico alterado, sistema perceptivo comprometido, sistema sensorial, cutánea e hídrico cambiados y sistema de regulación térmica afectada. **Conclusión:** los ancianos experimentaron cambios fisiológicos y patológicos y el enfermera gerontólogo puede contribuir a la planificación de acciones para mantener la integridad física de esto anciano de forma individualizada e integral.

**Descriptorios:** Anciano; Diagnóstico de Enfermería; Clasificación; Enfermería Geriátrica.

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## Introduction

The increase of the elderly population is a worldwide reality. In Brazil, there were 20,590,597 elderly in 2010, this fact raises needs of social and cultural changes to assist this population. Due to the demographic and epidemiological modifications, added the new perspective in the family organization and the tendencies of the integrating presence of the elderly in society, the health department developed, evaluated and implemented policies turned to this specific group<sup>(1)</sup>.

Aging presents important modifications which follow the elderly and need interventions in a systemized way in order to guarantee assistance and care, during old age. In this context it is essential to recognize the characteristics of this elderly especially the ones who are hospitalized, so actions of gerontology nurses can be taken, covering the care with the elderly, emphasizing the recuperation of their health, promoting health and welfare to live and get old.

The gerontology nurse needs training and education to assist the elderly with specific knowledge, concerning the matters of the aging of the population, the national rules, legislation and policies, besides developing actions which consider the limitation of such public, with the intention to contribute for the maintenance and promotion of health and autonomy<sup>(2)</sup>.

To improve the care and analyze it more deeply, the nurses observed the need to develop standardized models of classification, based on the Nursing Diagnosis. The period of the nursing diagnosis has been introduced in several nursing services in Brazil, complying with specific legislation and requiring improvement of common language, which favors the understanding among their peers on the clinical phenomena of interest, guiding the decision on what to do for them<sup>(3)</sup>.

As part of the nursing process, the nursing diagnosis is defined as: individual identification of

the manifestations reported by the people with the objective to equip the health professionals for the whole and individualized care which comes from the previously analyzed knowledge and the observation of such client<sup>(3)</sup>.

The Nursing Process integrates the Nursing Assistance Systematization and searches for the reorganization in a systemized way in the services in its integrating context, facing the problems and the difficulties of the daily life in attention to health, pluralized, which involves the health professional team and users, analyzed in the integrality of the care as a consequence of the evolutional and dynamic process<sup>(3)</sup>. In Article 2 of Resolution no. 358/2009, of The Federal Counsel of nursing presents, in order to perform the nursing process, five stages: History, Diagnosis, Planning, Implementation and Nursing Evaluation<sup>(4)</sup>.

The need and relevance to completely develop the Nursing Process is known, so in the present research the nursing diagnoses are highlighted.

The International Classification for the Nursing Practice, version 1.0 (ICNP)<sup>(5)</sup>, provides a unified and standardized language. It has seven axes: Focus, Judgment, Resources, Action, Time, Location and Customer. Such classification helps the gerontology nurse to assist the needs in a qualified manner in order to identify the problem of the hospitalized elderly. Still, the use of nursing diagnosis according to the referred classification can benefit other elderly, once it potentiates the assistance practice and aggregates quality to the assistance in health to the elderly and to society. In order to reach such purpose, there is the standardizing of the language and possibilities of systematized actions with technical scientific support.

According to the above mentioned, the present study was developed with the objective to identify the nursing diagnosis which is a characteristic of the elderly hospitalized in a medical clinic of a university hospital in southern Brazil, according to the International Classification for the Nursing Practice, version 1.0.

## Method

It is a descriptive, cross-sectional study. The research was made in a Medical Clinic Unit of a university hospital in southern Brazil, which uses the theoretical referential of nursing according to the assumptions of Ms. Wanda Horta de Aguiar.

24 elderly of both sexes participated in the study, with age between 61 and 87 years. The constitution of the researched group had as criterion to be hospitalized in a hospital unit of Medical Clinic I, in the period from August 22<sup>nd</sup> to October 30<sup>th</sup>, 2011, and so all the elderly hospitalized in the referred clinic in that period were included in the study.

The medical clinic, venue of the study, has a capacity for 22 patients, and the number of hospitalized elderly varies, as well as the period of permanence in the hospital, but generally half of the hospitalized patients are elderly.

The data used in this research were collected during the clinical interview and the nursing assistance rendered to the elderly, through the nursing process, with the identification of the problem and elaboration of nursing diagnosis according to ICNP, version 1.0<sup>(5)</sup>.

In order to have a register of the nursing care, at the unit of study, there is a data processing system, with their own protocols of assistance. The theoretical referential is grounded on the Theory of the Basic Human Needs, of Ms. Wanda Horta, but there is no complete use of the nursing process or according to any classification.

The data were collected and registered through clinical interviews, including physical exams, and the use of Katz's index. This index is based on the evaluation of the functional independence or dependence of the patients to bathe, get dressed, use the toilet, move around, being continent and eat without help<sup>(6)</sup>. The medical record was also checked to gather information regarding their health/disease condition and the evolution of the elderly from the moment of hospitalization until his discharge: age,

weight, level of dependence, bathing, eating, dressing, use of the bathroom, continence, blood pressure, body temperature, morbidity, neurological evaluation, cardiac and lung auscultation, capillary glycaemia, eliminations, visual and hearing, pain, characteristics of the skin, presence of central or subcutaneous periphery venous access. These elements were organized by the Table of Theorization, according to the ICNP standard, version 1.0.

For the elaboration of the diagnoses the existing data for each one of the elderly were analyzed, afterwards the nursing problems were listed and then using clinical thinking 158 identified diagnoses described according to ICNP, version 1.0 were structured, resulting in the organization of 23 groups which represents body systems and deficits. These, in turn, were grouped into 14 macro groups presented by similarities.

The study was authorized by the direction of the institution and approved by a Committee of Ethics in Researches with Human Beings, under Legal Opinion no. 2187.

## Results

As to the age of the elderly, eight were between 61 and 65 years, four between 66 and 70, one between 71 and 75, four between 76 and 80 and seven were 81 years old or more. Regarding to sex, 16 (66.7%) were women and 08 (33.4%) men.

As it is observed in Table 1, regarding the evaluation of functionality, according to the level of dependence of Katz's index, four (16.6%) elderly were independent, 14 (58.4%) partially dependent and six (25.0%) totally dependent.

**Table 1** - Level of dependence of the elderly

Level of dependence (Katz's index)	n (%)
Independent	4 (16.6)
Partially dependent	14 (58.4)
Totally dependent	6 (25.)

Total 24 (100,0)

When evaluating the level of dependence and the sex of the elderly, most of men (06; 75.0%) presented partial dependence. Among the elderly women, the larger proportion (08; 50.0%) presented partial dependence. When analyzing the level of dependence and the age, it could be observed that a larger number (14; 58.4%) of people with partial dependence and the people ≥ 81 years of age presented a higher proportion (05; 35.7%).

158 nursing diagnoses were identified, congregated in 23 groups, grouped into 14 macro groups, presented by similarities according to systems and deficits described in the ICNP (Figure 1).

Macro groups: Body system and deficit described in the ICNP		Diagnoses (n=158)
1	Cardiovascular system	39
2	Impaired self-care	20
3	Compromised respiratory system	19
4	Impaired locomotion system	15
5	Risk of infection	13
6	Altered dietary patterns and body weight	10
7	Impaired endocrine system	8
8	Altered gastrointestinal system	7
9	Committed genitourinary system	7
10	Altered neurological system	6
11	Compromised perceptive system	4
12	Sensorial system	4
13	Altered cutaneous and hydric system	3
14	Affected thermal regulatory system	3

**Figure 1** - Diagnoses of nursing according to the body system and deficits described in the ICNP

Of the 158 identified diagnoses, the larger quantity (n=39) was related to the chronically impaired cardiovascular system, of those 22 made evident by high blood pressure, 11 by structural and functional alterations of the heart, such as the systolic

murmur and irregular rhythm; and six diagnoses of chronically impaired tissue perfusion made evident by edema, venous ulcer, inflammatory sings and irregular pulse.

The diagnosis of dependence for self-care was made evident in 20 hospitalized elderly. The deficient self-care identified in this research is characterized into two domains: totally and partially dependent for self-care.

In those elderly with level of total dependence for self-care, there was alteration in their neurological conditions, with low level of consciousness and little physical morbidity. Among all the researched subjects who presented total dependence for self-care, this condition was resulting from the lowering of the level of consciousness due to sequels are similar to the ones identified in the researched to diagnose dependence, in which they are outstanding, not only in this diagnosis, but also visual, motor, cognitive, sensorial, verbal and emotional deficits, and the four first ones are directly related to diagnosis under discussion.

The elderly in this research identified as partially dependent for self-care were attacked by hemiparesis, amputation of the lower limbs, deformity of the superior and inferior limbs, debility of physical strength, weakness, risk of fall and morbid obesity.

Concerning the diagnosis of the impaired respiratory system, 14 elderly were identified characterized by noisy, superficial respiration, tachypnea, dyspnea to efforts, wheezing, rattle, decreased breath sounds in thorax, breath sounds, decreased saturation, productive cough. Other five elderly presented the same diagnosis, characterized by the use of supporting equipment: Bilevel Positive Pressure Airway, tracheostomy and type glasses extra-nasal catheter.

There were 15 elderly with impaired locomotion system, with the following defining characteristics: amputation, debility of the physical strength, hemiparesis, neurological depletion, edema, pain, obesity and skeletal muscle loss.

In turn, the diagnosis risk for infection due

to the implantation of peripheral venous access, central and subcutaneous was identified in 13 elderly, thus characterizing the importance of the actions of nursing in the prevention of the risk of infection due not only to the access, but also by the immunological condition of the patients.

The diagnosis eating standard and altered body mass, characterized by inappetence, high inappetence, difficulty of deglutition, loss of weight, weakness and/or obesity was verified in seven elderly. Other three elderly presented the mentioned diagnosis due to low and moderate body mass made evident by a profound loss of weight.

The diagnosis of the impaired endocrinology system, characterized by hyperglycemia, obesity, hyperthyroidism and hypothyroidism occurred in eight of the 24 elderly in this research, while the altered gastrointestinal system, characterized by intestinal constipation and hematemesis, was identified in seven of the 24 elderly participants in this research.

Concerning the impaired genitourinary system, characterized by dysuria, oliguria, polyuria, pyuria, incontinence, hematuria, urethral injury and leucorrhoea, present in seven elderly, six of which were directly levied on urination and the characteristics of the urine; and with changes in the reproductive system, with the presence of vaginal discharge.

Regarding the diagnosis of impaired perceptive system, it was characterized by the decreased visual acuity, made evident in four elderly, two of them with diagnosis of difficulty to identify images and palpebral ptosis, and the other two elderly with diagnosis of decreased hearing acuity related to the process of aging, with low communicability and incoherent responses.

As to the diagnosis of the impaired sensorial system, reported by pain among four elderly, the pain was evaluated as discrete, moderate, penetrating, with tingling, which provokes excitement and insomnia.

The diagnosis of the altered cutaneous system observed by dry skin, scaly and itchy, and the diagnosis of altered body hydric standard, characterized by the

low liquid ingestion, little skin turgor and scaly skin, happened in three elderly and, affected hydration was highlighted. The altered regulation system was made evident through episodes of hyperthermia.

## Discussion

With aging, the conductive cells of the heart with the deposit of collagen and calcium, partial substitution of the cardiac muscle by adipose tissue and fibrosis in the valve tissues, especially in the mitral and aortic rings decrease. Concomitantly to the alterations of the structure and functionality of the heart there are modification of the circulatory system, altering the structures of the arteries, veins and capillary vessels. The degenerations of large arteries, reduction of the sensitivity of baroreceptors of the carotid sinus region, loss of elasticity, decreased sensation, thickening of the vascular wall and calcification may be the most common causes of heart disease found in the elderly<sup>(7)</sup>.

Other modifications occurred in the other systems also affect directly the cardiovascular system. The smallest activity of the sodium-potassium-ATPase enzyme of the myocyte and of the erythrocytes leads to increase intracellular sodium and calcium, increasing the vascular tone and peripheral vascular resistance. In the elderly over 80 years old, hormonal and renal changes are more accentuated, reducing the responsiveness of the muscle fibers<sup>(7)</sup>.

The profile of the patients of the medical clinic revealed a great incidence of cardiovascular disorder and chronically impaired tissue perfusion related to the chronic degenerative conditions proper of the process of aging confirming the findings in the gerontogeriatric literature.

The cardiovascular alterations which involve the chronic condition can represent experiences of life which involves permanence and deviation of normal condition, caused by pathologies which cause losses and dysfunctions, and permanent change in the daily life of these elderly<sup>(8)</sup>.

Concerning the diagnosis of impaired locomotion system, it is considered that it has a relation with the falls, and can cause dependence to self-care, especially in the activities of the daily life such as: laying down/getting up, walking on a flat surface, cutting the toe nails, having a shower, walking out of the house, taking care of the finances, going shopping, using public transportation and climbing-up stairs<sup>(9)</sup>.

In a research made with 435 medical records, there was prevalence of diagnosis of compromised respiratory system, related to the same signs and symptoms, such as noisy respiration, shallow, tachypnea, dyspnea, dyspnea to efforts, wheezing, gasp, breath sounds decreased in hemithorax, adventitious noise, reduced saturation, productive cough<sup>(10)</sup>.

When there is deficiency in the system, preventing adequate oxygenation, there is the need of external support. The equipment of support related to the impaired respiratory system of the elderly in this research is the indicated extra-nasal catheter: cardiac output functions, arterial oxygen content, hemoglobin concentration and metabolic demand are insufficient. This equipment is very used by the elderly due to the physiological alterations which impair the fast recovery of the system, thus the need of the use of technology which provides help, decreasing the respiratory effort and the cardiac overload, situations of stress to which the elderly is submitted.

In a theoretical study, 15 publishing were outstanding with diagnosis of impaired respiratory system according to ICNP; in this research they were in 5 elderly. In both it was necessary to use equipment such as the Bilevel Positive Pressure Airway, tracheostomy and glasses type extra-nasal catheter to keep the patient stable<sup>(11)</sup>.

The neurological problems resulting from Cerebral Vascular Accident related to the diagnosis of impaired locomotion system emerge as a finding in this research reinforcing the results of another study made in the State of Ceará, in which a similar result

was found in two samples of 73 and 109 elderly<sup>(12)</sup>.

The correlation between unbalance in moving, fall and the diagnosis of impaired locomotion system was confirmed in a research with 50 elderly of both sexes, 60 years old or more, resident in Ribeirão Preto, São Paulo, and there was a higher frequency in women correlated to the physical environment, causing dependence for the performance of the activities of their daily lives<sup>(9)</sup>.

As to the hospital infections, it is highlighted that historically at the end of the 19<sup>th</sup> century and the beginning of the 20<sup>th</sup> century there were important contributions for the prevention of hospital infection, with repercussion for the individual and collective nursing care<sup>(13)</sup>.

Individually, the immunological alteration of the elderly himself, which involves the substitution of the production of B cells against bacterium infection and the deletion of the T cells against viral, fungi, parasitic, allergic infection and rejection of transplant by non-working cells, or cells of memory, which make the identification of new pathogens difficult interfere in the risk of hospital infection. The association of the susceptibility of the elderly to the hospital environment contributes for the risk of dissemination and contamination of the hospitalized elderly, due to: the great number of strains collected in the hospital environment; inadequate use or non-use of the equipment of individual protection, deficit of sanitation of hands and use of devices of peripheral vascular access used in this environment, where doors are open and they are means of culture to provide the occurrence of infection sites<sup>(13)</sup>.

Regarding the cares of nursing with the food, orally or nasal-enteral, these directly influence in the quality and frequency of the food diet, once alterations in the ingestion can cause inadequate nutritional condition and enhancing the pre-existent problems, aggravating nutritional condition of the elderly, turning into a harmful cycle, inducing fragility.

Still regarding food, the eliminations in an elderly patient many times present characteristic

of constipation, of multifactorial organ, related to inadequate eating habits, such as food poor in fibers and little hydric ingestion, structural and functional alterations of the gastrointestinal system. Also the frequent uses of laxatives are factors which can contribute for the emerging of intestinal constipation<sup>(14)</sup>.

The alterations in the genital urinary system can result from modification of the renal system. The renal changes generally start from the fourth decade of life, with the decrease of weight and size of the kidneys, affecting the capacity of filtration and excretion of the blood, losing 1% of the filtration for each year of life lived. The kidneys are extremely vascularized organs and suffer atrophy, sclerosis and hyperplasia of the renal vessels, glomeruli and tubules<sup>(14)</sup>.

Another main structure in the affected genitourinary system is the bladder, a shallow muscle organ. Alterations suffered in the nervous system (sympathetic/parasympathetic) affect its main functions, relaxation, storage, contraction and expulsion of urine: in the muscular system (smooth/voluntary) change significantly both storage capacity and expulsion of urine, causing signs as urinary urgency, polyuria and oliguria, which also observed in the elderly of this research. Infectious, metabolic or neoplastic diseases can cause disorders in the genitourinary system, such as urinary tract infections, prostatitis or nephrolithiasis and urolithiasis, bladder and uterine prolapse<sup>(14)</sup>.

The signs and symptoms observed and described for the composition of the diagnosis of altered body hydric standard are associated to several previous factors, and they can be related to clinical conditions as well as previous eating. However, considering the situation of hospitalization, such signs confirm the special need of observation of the hospitalized elderly, once the physiological condition related to a smaller quantity of body liquid, cutaneous and muscle resistance favor the worsening of the diagnosis and increased treatment time.

As to the endocrine system, this has a

direct relationship with the increased incidence of diseases<sup>(14)</sup> such as diabetes mellitus; multiple organ failure; polyglandular failure; hypothyroidism and hyperthyroidism. In a research made in a Bahia public hospital for a month, despite the high identification of the nursing diagnosis of impaired endocrine system in the elderly, there were interventionist actions, using the nursing process, at all levels, with positive and satisfactory results for the patient<sup>(15)</sup>.

With aging the process of continuous degeneration of the brain starts as well as the annexed structures, with morphological and psychological alterations which vary from subject to subject. Among the modifications of the central nervous system we can mention: decrease of the size of the brain, for natural apoptosis of neurons and associated structures such as the cerebellum, thalamus, spinal cord and the complex network of innervation that is distributed throughout the body originated from the brainstem<sup>(14)</sup>.

Regarding the pain, a study supports that this symptom influences the subject to have less energy for the daily life activities, alterations in sleeping, emotional disorders, intestinal and bladder changes, muscle contracture of the lower limbs, confirming the data observed in research in relation to insomnia and agitation<sup>(16)</sup>.

The importance of monitoring the body temperature related to metabolic, neuro-hormonal, behavioral and adaptation reactions should also be highlighted. The thermoregulatory mechanisms are controlled by thermoreceptors, resulting from heat generated and dissipated<sup>(17)</sup>.

Among the reasons for the retention of heat and permanence of the minimum temperature of 36 degrees Celsius and a maximum temperature of 37 degrees Celsius, they are as follows: peripheral vasoconstriction, increased heart rate, muscle vasodilation, tremors and increased metabolic rates correlated with prevalent diseases in the elderly, such as stress, diabetes, cardiovascular diseases, hematological, neuromuscular, renal and

digestion diseases, mobility impairment, permanent infectious focus, hypothalamic damage and caused by dehydration<sup>(18)</sup>.

Despite the identification of a smaller number of diagnosis related to thermal regulation, this is an important aspect for the nursing care, considering the predisposition of the elderly to infection and body thermoregulation with modification of surface temperature, as well as signs and symptoms which can be confused with the process of normal aging. In the elderly hypothermia is more common due to the deficiency of the thermalregulatory system, as well as the absent of fever peaks. The body temperature is an important sign and must be monitored and hyperthermia must be prevented, once it can cause great damage for the health of the elderly<sup>(18)</sup>.

## Final Considerations

The most prevalent diagnosis of the elderly hospitalized in a medical clinic was related to the cardiovascular, respiratory system and regarding the jeopardized self-care. Such information showed to be relevant, once its early identification makes the planning of actions of nursing care possible, having a repercussion in the reduction of the hospitalization and a better recovery of the elderly population.

The hospitalized elderly experience physiological and pathological alterations and the gerontology nurse can contribute with the planning of action aiming at the maintenance of the physical integrity of this elderly in an individualized and whole manner.

The Gerontology Nursing is incentivized to use the ICNP, developing knowledge based on the process of nursing, aggregating theoretical knowledge regarding aging and the needs of care, stimulating the planning of more adequate interventions to the elderly. However, it is necessary to hurry and enhance the studies on the emerging diagnosis of hospitalized elderly, as a subsidy for directing the nursing care in the hospital environment.

## Collaborations

Andrada MMC contributed for the collection, organization, analysis and interpretation of the data and writing of the article. França M helped in the data collection, organization and analysis of the data. Alvarez AM and Hammerschmidt KSA guided and supported the construction of the article and the revision for the publishing.

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