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Original Article

NURSING DIAGNOSES IN PERSONS WITH HIV/AIDS: AN APPROACH BASED ON HORTA'S CONCEPTUAL MODEL*

DIAGNÓSTICOS DE ENFERMAGEM EM PESSOAS COM HIV/AIDS: ABORDAGEM BASEADA NO MODELO CONCEITUAL DE HORTA

DIAGNÓSTICOS DE ENFERMERÍA EN PERSONAS CON VIH/SIDA: ENFOQUE BASADO EN EL MODELO CONCEPTUAL DE HORTA

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This study aims at identifying nursing diagnoses in hospitalized persons with HIV/AIDS. It is a cross-sectional study carried out with 30 patients admitted at an infectious and parasitic disease clinic inside a teaching hospital in the state of Minas Gerais from March to September 2011. In order to identify the diagnoses, the NANDA Taxonomy II system was applied, together with an instrument based on Horta's conceptual model. The most common nursing diagnoses were: ineffective protection (100%), risk of vascular trauma (86.7%), imbalanced nutrition - less than body requirements (76.7%), impaired physical mobility (53.3%) and acute pain (53.3%). These diagnoses are relevant to manage the planning of nursing interventions towards the actual requirements with the purpose of promoting better health conditions to these patients.
Descriptors: Nursing diagnosis; Nursing; Acquired Immunodeficiency Syndrome.

Estudo objetivou identificar os diagnósticos de enfermagem em pessoas com HIV/aids hospitalizadas. Estudo transversal realizado com 30 pacientes internados na clínica de doenças infecciosas e parasitárias de um hospital universitário de Minas Gerais, no período de março a setembro de 2011. Para identificação dos diagnósticos foi utilizado a Taxonomia II da Nanda e um instrumento fundamentado no modelo conceitual de Horta. Os diagnósticos de enfermagem mais frequentes foram; proteção ineficaz 100%, risco para trauma vascular em 83,3%, nutrição desequilibrada: menos que as necessidades corporais em 76,7%, mobilidade física prejudicada em 53,3%, dor aguda em 53,3%. Estes diagnósticos direcionam o planejamento das intervenções de enfermagem para as necessidades existentes com vistas à promoção da saúde desses pacientes.
Descritores: Diagnóstico de Enfermagem; Enfermagem; Síndrome da Imunodeficiência Adquirida.

El objetivo fue identificar los diagnósticos de enfermería en personas que viven con el VIH/Sida hospitalizados. Este estudio transversal con 30 pacientes ingresados en la clínica de enfermedades infecciosas y parasitarias de un hospital universitario de Minas Gerais, Brasil, de marzo a septiembre de 2011. Para identificación de los diagnósticos se utilizó a Taxonomía II de NANDA e instrumento basado en el modelo conceptual de Horta. Los diagnósticos de enfermería más frecuentes fueron protección ineficaz 100%, riesgo de trauma vascular en 83,3%, nutrición desequilibrada: menos de las necesidades del cuerpo en 76,7%, problemas de movilidad física en 53,3% y dolor agudo en 53,3%. Estos diagnósticos dirigen la planificación de las intervenciones de enfermería a las necesidades existentes con visitas a la promoción de la salud de estos pacientes.
Descriptores: Diagnósticos de Enfermería; Enfermería; Síndrome de Inmunodeficiencia Adquirida.

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INTRODUCTION

AIDS is a pandemic with notified cases in all five continents. It is estimated that 34 million people are living with the HIV virus worldwide. The increase, compared to the 32.8 millions estimated in 2008 is due to the fact that more infected people are living more as the access to antiretroviral therapies becomes more widespread. [1].

AIDS has killed many people, however, thanks to easier access to medication the number of deaths in gradually diminishing, from 2.2 million in 2000 to an estimated 1.8 million in 2010[1].

Despite the benefits of the antiretroviral therapy, AIDS has a physical, psychical and social impact on HIV positive patients and the nursing care offered to these patients must be performed through systematized initiatives, seeking to achieve positive results in the assistance to such patients.

The nursing process, as a means to systematize assistance, directs nursing care for these patients and helps in the decision-making process through a scientific approach, and it is composed of five different stages: data collection, diagnosis, planning, implementation and evaluation [2].

In Brazil, the Nursing process (NP) began in the seventies with Wanda de Aguiar Horta. The proposed NP is based on Maslow's basic human needs and João Mohana's psychobiologic, psychosocial and psychospiritual needs. Basically, it aims at meeting the patient's basic needs and the development of individual self-care potential [3].

The first stage of the nursing process is data collection to enable problem identification. Based on the clinical analysis of such information, we reach the second stage, the nursing diagnosis, which is the phase in which human needs are identified [3].

Considering the seriousness of the disease, it is important to be familiar with the nursing diagnoses profile, seeking to propose individualized initiatives, establishing the basis for a specific care plan aimed at these patients.

The taxonomy II of the NANDA-I is a nursing diagnosis classification system. Therefore, the use of standardized language for nursing diagnosis may contribute to future national and international studies.

In this context, the present study was develop with the goal of identifying nursing diagnoses in HIV/AIDS patients hospitalized according to Horta's conceptual model and the NANDA-I Taxonomy II system.

We believe that the study shall contribute to think and reflect on the improvement of care for HIV/AIDS patients based on the Nursing Process, seeking to propose an assistance model aimed at the patients' real needs.

METHODS

This is a cross-sectional study performed with 30 HIV/AIDS patients hospitalized at an infectious and parasitic diseases clinic belonging to a School Hospital in Minas Gerais. The research was carried out between the months of March and September, 2011, totalizing six months of data collection.

The said infectious and parasitic diseases clinic has six beds, being three male and three female ones. The institution is considered a reference center for Public Heath System patients' assistance in the Minas Gerais macro-region. It boasts a team of more than 800

people, out of which 232 are teachers, 468 are technical-administrative staff and 103 are residents, with an occupational infrastructure of 156 beds.

The group of people included in this study consisted of HIV/AIDS patients hospitalized in the Infectious and Parasitic Diseases Clinic of a University Hospital in the Minas Gerais State during the study period, meeting all inclusion criteria.

The following inclusion criteria were selected: being accompanied by the researcher for at least three days during hospitalization and aged between 18 and 60. Underage or over 60 patients and those who did not have physical capacity to sign the Informed Consent Agreement had their agreements signed by their families or caregivers in order to be allowed to take part in the study.

The analysis performed was processed simultaneously with data collection, seeking to identify defining features, related facts and vulnerability situations with the aim of confirming nursing diagnoses as the interviews were being developed together with the patients. It is worth highlighting that based on the application of the initial plan, patient accompaniment during consecutive days allowed to add new information to the database.

An instrument based on Horta's conceptual model was used for data collection. It was elaborated at the São Paulo Federal University Nursing Hospital and designed by the Study Group on Nursing Assistance Systematization. This instrument approaches items such as: personal and family health records; current disease history; living habits at the biological, social and spiritual levels; interviewer's perceptions and physical exams, including also some specific questions for HIV/AIDS patients such as seroconversion time, use and adherence to antiretroviral therapy [4].

After the interview and the physical exam, data collected was processed through the SPSS program, version 13.0, which enabled to organize information through tables, seeking to identify nursing diagnoses according to the NANDA-I Taxonomy II system, based on Horta's basic human needs conceptual model, according to each subcategory.

Data obtained was evaluated by three nurses experienced in clinical practices and nursing diagnosis. The consensus reached among the researcher and the professionals was the criterion applied to accept diagnoses.

The study was approved by the Research Ethics Committee of the Juiz de Fora Federal University Hospital in agreement with regulation 248/1, following recommendations detailed in human research protection Law 196/96.

RESULTS

The study analyzed the nursing diagnoses profiles identified for HIV/AIDS patients hospitalized in agreement with the Nanda I Taxonomy II model, following Wanda de Aguiar Horta's theoretical model. With regards to psychobiological needs, diagnoses were analyzed based on the following identified subcategories: oxygenation, nutrition, elimination, exercise and physical activity, sexuality, body data, cutaneous and mucosal integrity, physical integrity, thermoregulation, perception and therapeutics.

Table 1 – Distribution of nursing diagnosis in HIV/AIDS patients according to Horta's basic psychobiological human needs, Minas Gerais, 2011(N=30).

Basic Human Needs	Manifestation of Needs	Nursing diagnosis	N	%
Psychobiological	Oxygenation	Body gas compromised	10	33,3
		Aspiration risk	3	10
	Nutrition	Imbalanced nutrition: less than body requirements	23	76,7
		Risk of liver function compromise	14	46,7
	Elimination	Compromised urinary Elimination	8	26,7
		Diarrhea	7	23,3
		Constipation	7	23,3
	Sleep and Rest	Insomnia	12	40,0
	Exercise and Physical Activity	Physical mobility compromised	16	53,3
		Ambulation compromised	7	23,3
	Sexuality	Inefficient sexual standards	12	40
		Sexual dysfunction	4	13,3
	Body care	Self-care deficit for bathing	16	53,3
		Self-care deficit for personal hygiene	8	26,7
		Self-care deficit for feeding	8	26,7
		Self-care deficit for dressing	5	16,7
	Cutaneous and mucosal integrity	Skin integrity risk	12	40
		Oral mucosa compromised	12	40
		Skin integrity compromised	6	20
	Physical integrity			
		Inefficient protection	30	100
		Vascular trauma risk	25	83,3
		Fall risk	7	23,3
	Thermoregulation	Hyperthermia	7	23,3
	Perception	Acute pain	16	53,3
		Memory compromised	3	10
		Nausea	2	6,7
		Visual and sensorial perception compromised	2	6,7
		Acute confusion	1	3,3
	Therapeutics	Goodwill for increased control of therapeutic regime	5	16,7
		Lack of adherence	10	33,3

With regards to oxygenation needs, nursing diagnosis detected gas release problems (33.3%) and aspiration risks (10.0%). When we verified nutrition needs, the nursing diagnosis found cases of imbalanced nutrition: less than body requirements (76.7%) and risk of liver function compromise (46.7%). The following diagnoses related to elimination needs were also were also found: compromised urinary elimination (26.7%), diarrhea (23.3%) and constipation (23.3%).

As for other diagnoses found in this category, the physical integrity subcategory is predominant with inefficient protection (100%) and vascular trauma risk (83.3%).

The psychological impact of being HIV positive and its related psychosocial needs result in changes in the patient's life and in his/her family's. Nursing diagnoses were identified in the following needs: safety, communication, recreation, socialization and acceptance.

Based on patient statements, we can infer that religion is considered a tool to face disease in the search for sympathy and emotional support. In this category, we identified the nursing diagnosis "tendency for

increased spiritual wellbeing", as introduced in the table below:

Table 2 – Distribution of nursing diagnoses in HIV/AIDS patients, Minas Gerais, according to Horta's basic psychosocial human needs, 2011(N=30)

Basic Human Needs	Manifestation of Needs	Nursing Diagnosis	N	%
Psychosocial	Safety	Compromised Resilience risk	30	100
		Risky health behavior	13	43,3
		Suicide risk	3	10
		Anxiety	2	6,7
		Home maintenance compromised	1	3,3
	Communication	Compromised verbal communication	4	13,3
	Leisure	Insufficient leisure activities	3	10
	Acceptance	Inefficient denial	3	10
	Socialization/Affection	Loneliness risk	5	16,7
Psychospiritual	Religious	Spiritual wellbeing increased	3	10

In the patients from whom we obtained information related to basic psychosocial human needs, resilience risks were identified in nursing diagnosis. This is defined as the "risk of a reduction in the capacity to sustain positive reaction standards when facing a crisis or adverse situation". The problem was found in 100% of patients and it was considered as a risk factor related to the HIV virus infection itself.

The other nursing diagnoses identified in this subcategory were: risky health behavior in 43.3% of cases, suicide risk in 10%, anxiety in 6.7% and home maintenance affected in 3.3% of cases.

As for communication needs, the nursing diagnosis found verbal communication compromise in 13.3% of cases due to alterations in the central nervous system, which results in difficulty to verbally express ideas.

Through the analysis of patients' statements, we identified a nursing diagnosis of insufficient leisure activities in 10% of patients, which is related to the lack of recreational activities in the environment they are inserted, as a consequence of hospitalization.

It is also worth mentioning that with regards to the acceptance of HIV/AIDS patients, inefficient denial was detected as a nursing diagnosis in 10% of patients and the subcategory socialization/affection suggests that 16.7% of patients suffer risk of loneliness. These feelings are common among HIV/AIDS patients due to the social meanings built during the first outbreak stages. Seeking to better cope with the situation, many choose religion, which is clearly observed in the high psychospiritual need to boost wellbeing, perceived in 10% of patients.

DISCUSSION

In the oxygenation psychobiological need, breathing is an essential activity for human life and nursing must carefully evaluate its signs and symptoms, as well as related issues and risk factors associated to respiratory system alterations, seeking to identify

priority nursing diagnoses that contemplate real patient care needs [2].

With respect to nutrition requirements, the nursing diagnosis identified unbalanced nutrition (less than body requirements) which may compromise body resistance to sicknesses. Patients may also present weakness and concentration difficulty, among others problems. People who are below 20.0% of their acceptable normal weight are called cachectic, which is a state of extreme meagerness and severe malnutrition that may enable disease progress and increased mortality risk in HIV/AIDS patients [2].

As for body evacuation needs, the nursing diagnosis found was compromised urinary elimination, which is linked to an infection in the urinary tract characterized by dysuria and nocturia. Considering patient immunity deficiency as a risk factor for urinary tract infections, the importance of CD4 lymphocytes monitoring must be remarked, in order to verify HIV-induced immunodeficiency progression and early detection of renal condition [5].

With regards to the nursing diagnosis resulting from urinary elimination alterations, it is worth highlighting the importance of nursing care aimed at educational initiatives, teaching patients to detect urinary tract infection symptoms and signs and monitor urinary elimination (urine frequency, pain, volume and aspect).

As for intestinal evacuation, the nursing diagnosis identified was diarrhea, based on complaints of liquid feces and abdominal pain resulting from antiretroviral use, parasitosis and the HIV virus infection itself.

Diarrhea is an extremely common complaint in HIV/AIDS sufferers and may be linked to deficiencies in the quality of life of these patients due to the discomfort provoked by an increase in evacuation frequency and the volume of liquids lost, leading to a dramatic weight loss. Its prevalence growths with the reduction of CD4 count. It is important to remark the importance of diarrhea prevention measures, such as adequate hygiene and healthy eating habits, also learning to detect signs and symptoms early on in order to allow early treatment, seeking to avoid possible complications [6].

The reports on reduced intestinal evacuation frequency and abdominal pain pointed at the nursing diagnosis of intestinal constipation, which is related to insufficient physical activity and emotional tension. Bedridden patients may present some negative effects such as intestinal constipation. Such event is related to physical inactivity, a diet poor in fiber, low fluid intake and the adverse effect of some prescription medicines. Besides physiological factors, constipation may be associated to the emotional stress provoked by the hospital environment. [7].

As for the need for sleep and rest, studies demonstrated high insomnia prevalence in HIV/AIDS patients. However, this rate was not significantly higher when compared to non- HIV infected people. Sleep alterations are mainly linked to psychological factors such as anxiety and depression and although statements collected often associate it with an adverse effect of the antiretroviral therapy, few studies link insomnia risk to this medication [8].

Neurological alterations can discourage or impede exercise and physical activity. The nursing diagnoses identified in this category were compromised ambulation and physical mobility.

A study on neurological events in HIV/AIDS patients concludes that they occur due to the direct virus action in the brain, which causes opportunistic infections such as neurotoxoplamosis, tuberculosis,

cryptococosis meningitis, cytomegalovirus and neoplasias. During the terminal phase, the patient can present a neurological compromise that may lead to memory loss, locomotion difficulty and fine motor coordination compromise. The incidence of such events increases with CD4 lymphocyte reduction [9].

In the evaluation of body care, nursing diagnoses were identified with regards to self-care deficits, as patients needed help to perform some activities such as bathing, personal hygiene, dressing and eating. This fact reinforces the importance of evaluating HIV/AIDS patients' functional capacities, seeking to monitor the need for nursing care and direct assistance.

With regards to sexuality, it is important to remark that AIDS is a disease marked by prejudice and discrimination, which results in a loss of qualify of life by people who live with the disease. Considering sexuality as a key element of human relations, compromising sexuality due to the meanings and misconceptions related to the HIV infection limits the capacity of these patients to overcome the stigma that surrounds their condition [10].

We noticed that cutaneous-mucosal illnesses are highly prevalent in HIV positive patients. This diagnosis proved to be more evident as the disease progresses and immunity decreases. Therefore, in this study, we identified the nursing diagnosis of skin integrity risk in 100% of participants, usually linked to internal risk factors such as nutritional alterations, skin turgor alterations and use of medication, external factors such as physical immobilization and mechanical factors such as contention, among others [11].

As for perception needs, the nursing diagnosis of acute pain identified in the study participants is considered an unpleasant sensory, emotional and mental experience. This is due to psychological and behavioral reactions provoked by tissue damage, apparent or not, which is more frequent in inflammatory, traumatic, invasive or ischemic events. Acute pain starts slowly and suddenly with mild and intense levels with foreseeable end and duration of up to six months. It is related to biological, chemical, physical or psychological agents [2]. This diagnosis was typified by verbal narrations of pain and painful facial expressions.

When evaluating pain signs and symptoms, the nurse must consider the patient's individuality before elaborating a care plan, besides considering that the pain symptom is included in other nursing diagnosis as a related factor [12].

The nursing diagnosis of compromised visual and sensory perception is based on patient's reports of visual acuity reduction. Ocular events such as cytomegalovirus retinitis, ocular toxoplasmosis, zoster varicella virus retinitis and tumors such as conjunctival or palpebral Kaposi sarcoma and lymphomas are considered common in HIV/AIDS patients [13].

The reduction in visual acuity impacts the quality of life of these patients. Therefore, regular ophthalmologic tests must be performed to prevent ocular events. It is worth highlighting that the discovery usually occurs after patient complaint, when the problem is already installed. The study calls for systematized initiatives such as teaching the self-eye care test, prevention measures against risk factors and complications and information on specialized care service [13].

The acute confusion diagnosis was present in patients with a history of alcohol and drugs abuse and the withdrawal syndrome suffered after the hospitalization period. Conscience level fluctuations and increased agitation were reported.

As for thermoregulation needs, it is important to remark that hyperthermia is a common event in HIV/AIDS patients and it is often linked to the HIV infection itself and common infectious complications. It is therefore expectable that these patients can, throughout the disease development, present an increase in body temperature above normal standards, as the immune system is compromised by the HIV virus presence in the body.

With regards to the physical integrity need, as HIV/AIDS patients have their immunologic system compromised and generally require hospitalization, they are exposed to a higher infection risk.

The appearance of vascular lesions as a consequence of the central or peripheral venous access for intravenous drugs administration led to the nursing diagnosis of vascular trauma risk, which can develop depending on how a given vessel is punctured and the way in which the puncture/infusion is removed.

A study that approached vulnerability mechanisms and risk factors for the vascular trauma risk nursing diagnosis identified the following factors: measurement, infusion periodicity, intravenous catheter and permanence in the same insertion site and intravenous catheter fixation [14].

As for the nursing diagnosis of risk of falling, defined by NANDA as "increased susceptibility to falls that may cause physical damage", the risk factors include environmental, cognitive and physiological issues, as well as medications [12:343]. Participants were associated to risk factors due to the neurological compromise provoked by some opportunist diseases such as neurotoxoplamosis, cytomegalovirus and central nervous system cryptococosis, besides the compromise of the general condition in cases of diarrhea and anemia, which provoke movement difficulty and may increase the risk of falling down.

In terms of the need for therapeutics, it is important to mention that treatment adherence is considered one of the major challenges for the assistance of HIV/AIDS patients. Lack of antiretroviral therapy adherence is not just an individual problem, but also a public health problem due to the disease progression and viral resistance. This is corroborated by a study that considers the importance of being aware of all sociocultural aspects involved in medication adherence to elaborate an assistance plan. The importance of medical therapeutics cannot be neglected in people with HIV/AIDS. Consequently, the nurse must take the role of educator in order to build patient awareness and comprehension on his/her treatment [15].

With regards to the psychosocial need for safety, the nursing diagnosis of anxiety was identified and related to harsh financial situations and the change in heath conditions, which is expressed through concern, anxiety and insomnia.

The suicide risk nursing diagnosis was identified in studied patients that presented risk factors such as physical disease and social isolation. People with HIV have to face difficult situations that can trigger suicidal tendencies, such as living with a chronic and weakening disease, facing signs and symptoms of opportunist illnesses, the disease stigma, collateral effects of the antiretroviral therapy, etc, besides the concern with HIV virus transmission. As facing the condition becomes harder, they may start to use alcohol and illegal drugs, become socially isolated and develop significant emotional conflicts with feelings related to depression symptoms, which may increase the risk of suicide [16].

The psychosocial need for communication is considered extremely important for the interaction

between nurse and patient, as it is necessary to understand the meaning of both verbal and non-verbal communication from HIV/AIDS patients.

Denial attitudes are common in these patients, as since the first outbreak, the disease was stigmatized as contagious, deadly and incurable. As it is a condition marked by prejudice and discrimination, denial reactions reflect the fear of revealing to the society their condition of HIV positives [17].

With regards to the need for socialization and affection, the nursing diagnosis of risk of loneliness can be explained through the difficulties that involve facing a terminal disease. The social isolation to which HIV/AIDS patient are subject to may lead to anguish and stress feelings that affect the patient's immunologic system [18].

The nursing diagnosis of increased spiritual wellbeing can be explained through the increased psychospiritual and religious needs that arise as an attempt to face the disease and related stigma in search for emotional wellbeing, better illness acceptance and an alleviation of fear in front of the uncertainty of death.

Therefore, psychobiological, psychosocial and spychospiritual needs are interrelated, as they are all part of the human being. Consequently, seeking to develop an efficient nursing care, it is necessary to implement strategies for a wide comprehension that contemplates all basic human needs.

FINAL CONSIDERATIONS

The use of an instrument based on the proposed model allowed us to identify human needs in HIV/AIDS patients and the relevant nursing diagnoses according to the NANDA- taxonomy.

By grouping nursing diagnoses according to the basic human needs listed in the theoretical model applied, we perceived that most participants are in the psychobiological category, but we should not forget that such needs are interrelated to psychosocial and psychospiritual needs as well, as they are all part of the human being.

Results suggest the importance of incorporating the use of a standardized language in order to improve nursing assistance quality and offer more visibility to possible nursing interventions based on the identified nursing diagnoses.

Among the study limitations it is worth remarking that although this work represents a preliminary study in the analysis of nursing diagnoses in hospitalized HIV/AIDS patients, it is necessary to develop further research with this group of 30 participants, as some of them have been hospitalized for a long period of time.

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