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ICNP® Diagnoses of People Living with AIDS, and Empirical Indicators

Diagnósticos da CIPE® de pessoas vivendo com AIDS e Indicadores Empíricos

Diagnósticos de la CIPE® de personas que viven con SIDA e Indicadores Empíricos

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ABSTRACT

Objective: To analyze the association between the empirical indicators and ICNP® nursing diagnoses in people living with AIDS, as well as to identify the predictive indicators for the establishment of these diagnoses. **Method**: A cross-sectional study with 120 people living with AIDS, in a hospital in Northeastern Brazil, conducted from August to September 2015, following the steps: identification and validation of Empirical Indicators; preparation and validation of the ICNP® Nursing Diagnoses; and analysis of the association between the Empirical Indicators and the Nursing Diagnoses resulting from the two previous steps. To analyze the data, we used logistic regression. **Results:** 74 Empirical Indicators were identified, being 31 of which were validated. 55 diagnoses were elaborated and 19 were validated, of which 16 were associated with the Empirical Indicators, identifying 31 predictors. **Conclusion:** The diagnoses presented significant associations with the Empirical Indicators. In addition, it was observed that the predictive factors of these diagnoses involved the human responses and complications related to the disease, which should be considered during the care provided by the nurse.

Descriptors: Nursing Processes; Nursing Care; Nursing Diagnosis; HIV; Acquired Immunodeficiency Syndrome.

RESUMO

Objetivo: Analisar a associação entre os Indicadores Empíricos e Diagnósticos de Enfermagem da CIPE® em pessoas vivendo com AIDS, bem como identificar os indicadores preditores para o estabelecimento desses diagnósticos. **Método:** Estudo transversal com 120 pessoas vivendo com AIDS, em um hospital no Nordeste do Brasil, realizado de agosto a setembro de 2015, seguindo as etapas: identificação e validação dos Indicadores Empíricos; elaboração e validação dos Diagnósticos de Enfermagem da CIPE®; e análise da associação entre os Indicadores Empíricos e os Diagnósticos de Enfermagem resultantes das duas etapas anteriores. Para análise dos dados, foi utilizada a regressão logística. **Resultados:** Identificaram-se 74 Indicadores Empíricos, sendo 31 validados. Elaboraram-se 55 diagnósticos e 19 foram validados, dos quais 16 obtiveram associação com os Indicadores Empíricos, identificando-se 31 preditores. **Conclusão:** Os diagnósticos apresentaram associações significativas com os Indicadores Empíricos. Além disso, observou-se que os fatores preditores desses diagnósticos envolveram as respostas humanas e complicações relacionadas à doença, as quais devem ser consideradas durante a assistência prestada pelo enfermeiro.

Descritores: Processos de Enfermagem; Cuidados de Enfermagem; Diagnóstico de Enfermagem; HIV; Síndrome de Imunodeficiência Adquirida.

RESUMEN

Objetivo: Analizar la asociación entre los indicadores empíricos y diagnósticos de enfermería de la CIPE® en personas viviendo con Sida, así como identificar los indicadores predictores para el establecimiento de esos diagnósticos. **Método:** Estudio transversal con 120 personas viviendo con Sida, en un hospital en el Nordeste de Brasil, realizado de agosto a septiembre de 2015, siguiendo las etapas: identificación y validación de los indicadores empíricos; elaboración y validación de los diagnósticos de enfermería de la CIPE®; y análisis de la asociación entre los indicadores empíricos y los diagnósticos de enfermería resultantes de las dos etapas anteriores. Para el análisis de los datos se utilizó la regresión logística. **Resultados:** Se identificaron 74 indicadores empíricos, siendo 31 validados. Se elaboraron 55 diagnósticos y 19 fueron validados, de los cuales 16 obtuvieron asociación con los indicadores empíricos, identificándose 31 predicadores. **Conclusión:** Los diagnósticos presentaron asociaciones significativas con los indicadores empíricos. Además, se observó que los factores predictores de estos diagnósticos involucraron las respuestas humanas y complicaciones relacionadas con la enfermedad, las cuales deben ser consideradas durante la asistencia prestada por el enfermero.

Descriptores: Procesos de Enfermería; Cuidados de Enfermería; Diagnóstico de Enfermería; VIH; Síndrome de Inmunodeficiencia Adquirida.

INTRODUCTION

The Acquired Immunodeficiency Syndrome (AIDS) is characterized as an important public health problem in the world and in Brazil[1-2]. Because it is considered a chronic disease since the advent of antiretroviral agents, it requires those directly involved in care to reinforce actions that positively influence lives of people living with AIDS. In this sense, the nurse, as a health professional, plays an important role in the health care of these people, developing technical and scientific skills that favor the organization and systematization of care[3].

Considering the need to systematize nursing care for people living with AIDS, the importance of the use of nursing terminologies is highlighted, since they allow the identification and documentation of standards of care. The International Classification for Nursing Practice (ICNP®) consists of a standardized terminology of the nursing language. Its structure of terms and definitions allows the collection, description and systematic documentation of the elements of Nursing Practice - what nurses do (nursing interventions) in relation to certain human needs (Nursing Diagnoses) to produce results (nursing results)[4].

The modern Nursing uses knowledge and procedures theoretically systematized and reformulated to implement the Systematization of Nursing Care (SAE - *Sistematização da Assistência de Enfermagem*). COFEN Resolution 358/2009 considers that the SAE organizes the professional work regarding the method, personnel and instrument, making possible the applicability of the Nursing Process. This should be based on a theoretical support that guides the execution of its five phases, namely: investigation, diagnosis, planning, implementation and evaluation of nursing[4-5].

In this context, Wanda Horta's Theory of Human Basic Needs (HBNs) contributes to the satisfaction of patient's needs, be it biological, spiritual or social. The concepts of this theory permeate the PE by virtue of focusing on human-centered care in meeting their basic needs through observation, interaction and intervention with the individual[6].

However, this theory lacks Empirical Indicators (EIs), which often makes it difficult to identify problems and elaborate Nursing Diagnoses (NDs). EIs are experimental propositions used to measure and provide evidence about the concepts of a theory[7]. In this study, we considered EIs the manifestations of altered HBNs of people living with AIDS.

Based on the hypothesis that EIs subsidize the identification of NDs and provide a more scientific basis for nurses' practice of care, it is necessary to analyze the association between them and NDs as a way to facilitate nurses' predictive capacity and implementation of the nursing interventions that will be more adequate to the real needs of people living with AIDS, thus demonstrating the relevance of the present study.

From this context, the following question emerged: Is there a statistical association between Empirical Indicators and ICNP® nursing diagnoses in people living with AIDS? What are the Empirical Indicators predictors for the establishment of ICNP® NDs of people living with AIDS?

OBJECTIVE

To analyze the association between Empirical Indicators and nursing diagnoses of ICNP® in people living with AIDS, as well as to identify the predictive indicators for the establishment of such diagnoses.

METHOD

Ethical aspects

The ethical precepts of Resolution 466/2012 of the National Health Council (*Conselho Nacional de Saúde*) of Brazil were respected. The research was approved by the Research Ethics Committee with the *Universidade Federal do Rio Grande do Norte* – UFRN.

Design, place of study and period

This is a cross-sectional study, with a quantitative approach, performed at a referral hospital in the treatment of infectious-contagious diseases in Northeast Brazil, between August and September 2015.

Population or sample; criteria of inclusion and exclusion

The calculation of the sample of people living with AIDS was based on the arithmetic mean of people assisted between 2010 and 2014 in the mentioned hospital, totaling 300. Thus, the formula for finite populations was used, considering the confidence level of 95% ($Z\infty = 1.96$), the sample error of 5% and the population size of 300, resulting in a sample of 120 people[8].

The selection was for convenience and consecutive, adopting the following inclusion criteria: having been diagnosed with AIDS, being over 18 years of age and hospitalized at the time of data collection. As exclusion criteria, we adopted: people who presented some type of mental disorder, evaluated through the Mini-Mental State Examination[9].

Study protocol

The research was carried out in the following steps: 1st - Identification and validation of Empirical Indicators; 2nd - Elaboration and validation of ICNP® Nursing Diagnoses; and 3rd - Analysis of the association between Empirical Indicators and Nursing Diagnoses resulting from the previous two steps.

To analyze the health condition for people living with HIV, the Person-Centered Clinical Method (MCCP - *Método Clínico Centrado na Pessoa*) was used to explore the experience of the disease, as well as the experience of the person's own problem. In addition, the method is associated with the interfaces of Human Basic Needs[10].

Data were collected from August to September 2015. An interview and physical examination script was designed, based on Wanda de Aguiar Horta's HBNs, which evaluated the tegumentary, respiratory, abdominal, cardiac and neurological condition. The instrument was submitted to a content validation process by six infectious nurses who worked as preceptors in the institution where the data were collected, based on the criteria of the scoring system proposed by Fehring[11]. They agreed to participate in the study, signing the Informed Consent Form.

Thus, they verified whether the content, appearance, clarity and applicability were adequate for the purpose of the research. They were also asked to suggest suggestions and modifications

considered pertinent. The items that achieved a Concordance Index (CI) ≥0.80 were considered validated among the specialists. The suggestions pointed out by the specialists were contemplated in the study. For greater reliability, a pre-test was performed with 10% of the sample of people living with AIDS, so that possible gaps were identified, however, there was no need for modifications.

Next, the instrument was applied to identify the EIs of HBNs in people living with AIDS. Afterwards, a focus group was held with the objective of obtaining opinions, completing information and obtaining a consensus among the six specialists who participated in the validation of the collection instrument, regarding the relationship of EIs with HBNs identified in the study. EIs with a CI ≥0.80 were considered valid among the specialists.

After the identification of the EIs and the categorization according to the HBNs, the researchers elaborated the NDs of the ICNP®, based on the version 2015. Gordon's diagnostic reasoning was adopted, which returns to the Hypothetical-Deductive model, considering the predictive testing of the hypothesis as the key to the diagnostic process[12]. It is worth mentioning that the diagnoses that showed agreement among the researchers were accepted. Those where there was disagreement were re-evaluated in their clinical histories until there was agreement.

The diagnoses were based on 120 worksheets constructed by the researchers, each one referring to a patient, arranged as follows: Presentation of the patient regarding sociodemographic and clinical data, and the listing of NDs and their respective EIs. Thus, each worksheet was sent to the specialist nurses to judge in isolation whether or not they agreed with the ICNP® NDs listed for each patient in each of the sent worksheets.

The six specialists who participated in the validation of the data collection instrument underwent a training provided by the researchers in order to verify the capacity for diagnostic inference. The objective was to minimize bias at the time of diagnostic inference. The following topics were addressed: Research Objectives, Method Used, Clinical Judgment, Nursing Care Systematization, ICNP®, Theory of HBN, EIs and explanation of the operationalization of the diagnostic inference process.

After the training, an evaluation was carried out with the six diagnosticians, in order to identify which professionals had greater capacity for diagnostic inference. For that, 10 fictitious clinical cases involving ICNP® NDs were elaborated. In these cases, the clinical history was narrated with information pertinent to the process of diagnostic inference. Then, from the EIs, the diagnostician should identify the NDs. The specialists performed the diagnostic inference of the 10 cases three times, reaching a total of 30 evaluations per specialist.

At the end, the performance of each one was evaluated through the Kappa coefficient to verify the agreement between pairs. In view of the results obtained, it was observed that the general Kappa coefficients obtained almost perfect agreement for three specialists, who were selected as diagnosticians. Finally, in the third stage, the researchers analyzed the association between EIs and NDs by means of inferential statistics.

Results analysis and statistics

After receiving the 120 worksheets, the researchers statistically analyzed the degree of agreement among the diagnosticians with respect to the NDs, so we chose the Content Validity Index (CVI) and Reliability or Interrater Agreement (IRA), which obtained the value equal or superior to 0.80, and the binomial test, using the program Statistical Package for the Social Science (SPSS), version 20.0.

To verify the association between NDs and validated EIs, Pearson's Chi-Square Test and Fisher's Exact Test were used. Finally, stepwise logistic regression was used to identify the EIs predictors of NDs that influenced the process of establishing the human responses presented by people living with AIDS. A significance level of 5% was considered.

RESULTS

The study was attended by 120 people living with AIDS, with a minimum age of 35 years and a maximum of 45 years (67.75%). The majority were male (57.78%), married (63.85%), autonomous (41.33%), white (54.21%) and Catholic (85.74%). 74 Empirical Indicators were identified; only 31 presented a CI> 0.80 and were considered validated, as shown in Chart 1.

It is worth mentioning that the distribution of Human Basic Needs was based on the distribution of the data collection instrument. Forty-five NDs were elaborated from the 31 valid EIs. For this purpose, a focus and judgment term of the ICNP® version 2015 was sought. However, only 19 NDs were considered validated, since they reached the established scores, which occurred of the agreement between the specialist nurses, being categorized according to the HBNs, as shown in Table 1.

Regarding the association between EIs and NDs, not all of them were statistically significant. Thus, Table 2 reveals the associations that were significant between NDs and EIs.

Although some EIs appear to be insufficient to determine the presence of NDs, for example, the "Live alone" EI and the "Loneliness" ND, the "Quick cry" ND and the "Low self-esteem", the tests used demonstrated statistically significant associations between EIs and ND of ICNP® for people with AIDS.

Immediately after the association tests, a logistic regression was performed to identify the EIs predictors of each ND, as shown in Table 3.

Thus, the EIs predictor identified were: For Dyspnea ND - Noisy breathing; for Dehydration ND - Turgor Skin; for Impaired swallowing ND - Slimmed, Nasopharynx and oropharynx lesions and Dysphagia; for the Impaired spontaneous bladder elimination ND - Indwelling Urinary Catheter and Dysuria; for Excessive bowel activity ND - Diarrhea, Slimmed; for Impaired skin integrity ND - Average temperature of 39.5 ° C, Slimmed, Hyperemia in the sacral region; for Impaired scalp hygiene ND - Seborrhea; for Hyperthermia ND - Average temperature of 39.5 ° C; for Impaired treatment diet ND - Abandonment of antiretroviral agents use; for Shake ND - Use of alcohol and drugs; for Insomnia ND - Use of medications to sleep; Fatigue; for Alcohol and tobacco abuse ND - Use of alcohol and drugs; for Loneliness ND - Live alone, Fear of exposing your ideas; for Impaired communication ND - Dysarthria; for the Fear of dying ND - Fear; for Low self-esteem ND - Quick crying, Sadness, Lack of self-confidence and Body changes.

In the discussion, we prioritized only the NDs that obtained statistically significant associations with their respective Empirical Indicators in the logistic regression.

Chart 1 – Distribution of Empirical Indicators in people living with AIDS, according to the Human Basic Needs

Empirical Indicators/ Kappa Values	Human Basic Needs
Noisy breathing (0.81); peripheral and central cyanosis (0.80)	Oxygenation
Dehydration (0.87); Turgor Skin (0.84)	Hydration
Slimmed (0.81); dysphagia (0.80); nasopharynx and oropharynx lesions (0.84)	Nutrition
Diarreia (0.85); Indwelling Urinary Catheter (0.80); dysuria (0.82); constipation (0.80)	Elimination
Use of medications to sleep (0.80); fatigue (0.85)	Sleep and Rest
Seborrhea (0.80)	Body Care
Hyperemia in the sacral region (0.80)	Skin and mucous integrity
Average temperature of 39.5° C (0.88)	Thermal regulation
Dysarthria (0.80)	Neurological regulation
Peripheral and central edema (0.80)	Electrolytic regulation
Recurrent infections, leukocytosis/leukopenia (CD4/CD8) (0.80)	Immune regulation
Altered heart rate (0.84)	Vascular regulation
Abandonment of antiretroviral agents use (0.87)	Treatment
Sadness (0.84); sad facies (0.84); fear (0.80) fear of exposing your ideas (0.80)	Emotional safety
Aphasia (0.80)	Communication
Live alone (0.92); lack of family support (0.90)	Gregarious
No future prospects (0.85)	Self-achievement
Quick crying (0.80); lack of self-confidence (0.88)	Self-esteem
Body changes (0.84)	Self-image
Abusive consumption of alcohol and drugs (0.80)	Psychosocial Attention

Table 1 – Distribution of Nursing Diagnoses for People with AIDS, according to the Human Basic Needs

Human Basic Needs	Nursing Diagnosis	CVI ≥ 0.80	IRA ≥ 0.80	*p* value
Oxygenation	Dyspnea	1.0	0.898	0.004
Hydration	Dehydration	1.0	0.824	0.001
Nutrition	Impaired swallowing	0.8	0.837	0.000
	Cachexia	0.8	0.971	0.001
Elimination	Impaired spontaneous bladder elimination	0.9	0.827	0.003
	Excessive bowel activity	0.8	0.897	0.000
Sleep and Rest	Insomnia	0.91	0.841	0.000
Body Care	Impaired scalp hygiene	0.85	0.919	0.001
Skin and mucous integrity	Impaired skin integrity	0.80	0.958	0.000
Thermal regulation	Hyperthermia	0.80	0.804	0.000
Neurological regulation	Shake	0.90	0.989	0.005
Vascular regulation	Bleeding	1.0	0.835	0.000
Treatment	Impaired treatment diet	0.80	0.897	0.001
Emotional safety	Fear of dying	0.80	0.871	0.00
Communication	Impaired communication	0.82	0.914	0.000
Gregarious	Loneliness	0.81	0.949	0.001
Self-esteem	Low self-esteem	0.90	0.975	0.00
Psychosocial Attention	Alcohol and tobacco abuse	0.90	0.947	0.000
	Drugs use	0.84	0.898	0.003

Note: IRA - Reliability or Interrater Agreement; CVI - Content Validation Index; Binominal Test - p <0.05.

Table 2 – Association of Empirical Indicators and ICNP® Nursing Diagnoses for People with AIDS

Nursing Diagnosis	Empirical Indicators	*p* value*
Dyspnea	Noisy breathing	0.041[1]
Dehydration	Turgor Skin	0.012[2]
Impaired swallowing	Slimmed	0.001[2]
	Nasopharynx and oropharynx lesions	0.001[1]
	Dysphagia	0.001[1]
Impaired spontaneous bladder elimination	Indwelling Urinary Catheter	0.003[1]
	Dysuria	0.032[2]
Excessive bowel activity	Diarrhea	0.001[2]
	Slimmed	0.001[1]
Impaired skin integrity	Average temperature of 39.5° C	0.001[1]
	Slimmed	0.040[2]
	Hyperemia in the sacral region	0.001[2]
Impaired scalp hygiene	Seborrhea	0.010[1]
Hyperthermia	Average temperature of 39.5° C	0.001[2]
Impaired treatment diet	Abandonment of antiretroviral agents use	0.001[1]
Shake	Use of alcohol and drugs	0.004[1]
Insomnia	Use of medications to sleep	0.001[2]
	Fatigue	0.002[2]
Alcohol and tobacco abuse	Use of alcohol and drugs	0.001[1]
Loneliness	Live alone	0.010[1]
	Fear of exposing your ideas	0.004[1]
Impaired communication	Disartria	0.001[2]
Fear of dying	Fear	0.001[2]
Low self-esteem	Quick crying	0.001[1]
	Sadness	0.023[1]
	Lack of self-confidence	0.001[1]
	Body changes	0.034[2]

*Note: [1] Fisher's Exact Test; 2Pearson's Chi-Square Test; * p <0.05.*

Table 3 – Distribution of Nursing Diagnoses predictors identified in patients with AIDS

Predictive Factors (Empirical Indicators)	Nursing Diagnoses		*p* value	Cox & Snell R^2	Nagelkerke R^2
	Present (%)	Absent (%)			
Noisy breathing	Dyspnea				
Present	80.5	3.5	0.002	0.627	1.000
Absent	0.0	16.0			
Turgor Skin	Dehydration				
Present	44.2	21.3	0.001	0.705	1.000
Absent	25.3	9.2			
Slimmed	Impaired swallowing				
Present	31.8	26.7	0.015		
Absent	21.9	19.6			
Nasopharynx and oropharynx lesions					
Present	53.9	2.6	0.038	0.749	1.000
Absent	0	43.5			
Dysphagia					
Present	52.2	8.8	0.001		
Absent	1.8	37.2			
Indwelling Urinary Catheter	Impaired spontaneous bladder elimination				
Present	52.2	8.8	0.004		
Absent	1.8	37.2			
Dysuria				0.649	1.000
Present	52.2	8.8	0.001		
Absent	1.8	37.2			

To be continued

Table 3 (concluded)

Predictive Factors (Empirical Indicators)	Nursing Diagnoses		*p* value	Cox & Snell R^2	Nagelkerke R^2
	Present (%)	Absent (%)			
Diarrhea	Excessive bowel activity				
Present	52.2	8.8	0.001		
Absent	1.8	37.2			
Slimmed				0.649	1.000
Present	52.2	8.8	0.002		
Absent	1.8	37.2			
Average temperature of 39.5° C	Impaired skin integrity				
Present	31.8	26.7	0.098		
Absent	21.9	19.6			
Slimmed					
Present	53.9	2.6	0.038	0.749	1.000
Absent	0	43.5			
Hyperemia in the sacral region					
Present	52.2	8.8	0.005		
Absent	1.8	37.2			
Seborrhea	Impaired scalp hygiene				
Present	80.5	3.5	0.002	0.627	1.000
Absent	0.0	16.0			
Average temperature of 39.5° C	Hyperthermia				
Present	80.5	3.5	0.001	0.627	1.000
Absent	0.0	16.0			
Abandonment of antiretroviral agents use	Impaired treatment diet				
Present	80.5	3.5	0.001	0.627	1.000
Absent	0.0	16.0			
Use of alcohol and drugs	Shake				
Present	80.5	3.5	0.002	0.627	1.000
Absent	0.0	16.0			
Use of medications to sleep	Insomnia				
Present	52.2	8.8	0.005		
Absent	1.8	37.2			
Fatigue				0.649	1.000
Present	52.2	8.8	0.002		
Absent	1.8	37.2			
Use of alcohol and drugs	Alcohol and tobacco abuse				
Present	52.2	8.8	0.004	0.649	1.000
Absent	1.8	37.2			
Live alone	Loneliness				
Present	52.2	8.8	0.005		
Absent	1.8	37.2			
Fear of exposing your ideas				0.649	1.000
Present	52.2	8.8	0.002		
Absent	1.8	37.2			
Dysarthria	Impaired communication				
Present	80.5	3.5	0.002	0.627	1.000
Absent	0.0	16.0			
Fear	Fear of dying				
Present	80.5	3.5	0.002	0.627	1.000
Absent	0.0	16.0			
Quick crying	Low self-esteem				
Present	31.8	26.7	0.001		
Absent	21.9	19.6			
Sadness					
Present	53.9	2.6	0.038		
Absent	0	43.5			
Lack of self-confidence				0.749	1.000
Present	52.2	8.8	0.001		
Absent	1.8	37.2			
Body changes					
Present	52.2	8.8	0.012		
Absent	1.8	37.2			

DISCUSSION

Nursing care for people living with AIDS requires nurses to identify altered human responses to meet their Human Basic Needs, since all these needs are interrelated to varying degrees of intensity and are altered when there is imbalance of any of them[13].

Psychobiological and psychosocial needs are common to all living beings, in different aspects of organic complexity; the psychospirits are unique characteristics of the human being. Within the psychobiological, there is the need for oxygenation, in which the individual needs to obtain oxygen through ventilation; diffusion of oxygen and carbon dioxide between the alveoli and blood; transport of oxygen to peripheral tissues and removal of carbon dioxide; and regulation of breathing, with the aim of producing energy and sustaining life[14].

In the field of Need for Oxygenation, the EI predictor for "Dyspnea" ND was the "Noisy breathing". In people living with AIDS, changes in the process of inspiration and expiration result from a variety of factors, including diseases, including tuberculosis, which modify the composition of the lung parenchyma, causing the lung cells to produce more secretion, accumulating, affecting systemic perfusion and increasing the risk of developing bronchiectasis[15]. Therefore, oxygen therapy should be implemented by nurses to improve ventilation and perfusion, but with caution[16].

For the "Dehydration" ND, the EI predictor was the "Turgor Skin"; for the "Impaired swallowing" the predictors were "Slimmed", "Nasopharynx and oropharynx lesions" and "Dysphagia". It is noted that these two diagnoses are related, since inability to swallow affects the water and electrolyte balance of people living with AIDS. The causes for this situation may be related to the presence of lesions in the oropharynx cavity, due to infections, such as those caused by *Candida albicans*[16].

Turgor Skin is characterized by a practice that tests the elasticity of the skin, which, in people with body water loss, is modified, as was identified in people living with AIDS. Regarding the "Impaired spontaneous bladder elimination" ND the EIs predictors were "Indwelling Urinary Catheter" (IUC) and "Dysuria". Already, from the diagnosis "Excessive bowel activity", diarrhea and slimmed were detected[16-17].

Dysuria in people living with AIDS usually stems from Urinary Tract Infections (UTIs) due to nephrotoxic drug use aimed at treating opportunistic infections. These lesions lead to impaired renal function, causing changes in the vesico-motor system, reducing the glomerular filtration rate, presenting anuria, or oliguria[16].

In view of this, the IUC should be performed, obeying the correct technique, in order to avoid complications such as: urethral abscesses and fistulas, catheter incrustations, UTIs, pyelonephritis, sepsis and death. Thus, the nurse should perform safe practices, as well as the genitourinary physical examination, besides encouraging water intake and performing a rigorous water balance[16-17].

Regarding the EI predictors of "Excessive bowel activity" ND, diarrhea and slimming were identified. It is noted that diarrhea corroborates for slimming, because people with AIDS present in the acute phase of severe diarrhea that affects blood osmolality. In addition, it may be focused on Systemic Inflammatory Response Syndrome (SIRS), as in the use of antiretroviral agents, thus leading to the progressive loss of certain substances, such as amino acids, proteins and ions, affecting body composition[18].

In this way, the nurse can implement interventions such as: the measurement of the Body Mass Index (BMI), request for nutritional assessment, guidance on healthy eating habits and irritant foods. In addition, supplementation through a high-protein diet is important, by measuring intake and loss[19].

For Impaired skin integrity ND, the predictive EIs were the "Average temperature of 39.5 ° C", "Slimmed" and "Hyperemia in the sacral region". It is observed that all are related, because the increase in temperature that results from the deficiency of immunocompetence leads to the progressive loss of proteins and ionic substances that affects the dermal texture. Another factor is SRIS, which affects the physiological anabolic process, leading to an intense catabolic phase, with loss of muscle mass and an adynamia. Thus, it is up to the nurse to perform interventions, such as biochemical evaluation, nutritional supplementation together with the nutritional team and musculoskeletal physical examination[20].

For "Impaired scalp hygiene" ND, the EI predictor was "Seborrhea", which is due to the accumulation of dirt on the scalp, as well as the presence of *Malassezia sp*, a fungus that affects hair piles, and is present in people living with AIDS, due to compromised immunity. Thus, the nurse must perform the daily evaluation of the scalp, and the hygiene with the use of appropriate substances[21].

Regarding the "Impaired treatment diet" ND, the EI predictor was "Abandonment of antiretroviral agents use", whose causes are directed to low educational level, complexity of treatment, adverse drug reactions, lack of support, psychological disturbances and the use of alcohol and drugs[22]. It is worth noting that the latter was an EI predictor for the "Alcohol and tobacco abuse" ND.

In the present study, it was identified that some patients presented the "Shake" ND, whose cause may be related to several etiological factors, among them alcohol and drug abstinence, provoking synaptic excitability, hypertension, tachycardia and sweating; as well as changes in mood or behavior and articulation of words, in other words, "Dysarthria", the EI predictor of "Impaired communication" ND. It is important to note that tobacco nicotine alters the viscosity of the blood and alcohol leads to loss of critical judgment, behavior, concentration and awareness. On the other hand, illicit drugs, such as cocaine and marijuana, cause a symptomatic exacerbation, such as tachycardia, convulsion, ventricular arrhythmias, shakes and hallucinations, affecting the sleep quality of such clients[23].

In "Insomnia" ND, the EIs predictors were the "Use of medications to sleep" and the "Fatigue". The cause of poor sleep quality may be related to the use of antiretroviral agents as well as alcohol and drug withdrawal. It is worth mentioning that patients who use medications on a daily basis tend to have their circadian cycle modified[2,18-23]. In addition, fatigue, which is characterized by the accumulation of lactic acid in the myocytes, can corroborate this picture. Thus, the nurse should implement care behaviors, such as placing the room in the shade, offering foods and teas that stimulate sleep, but in which there is no interaction with the prescribed medication, perform relaxing massages and a warm bath before bed as it releases a large amount of relaxing neurotransmitters, such as endorphin[24].

For the "Loneliness" ND, the EIs predictors were "Live alone" and "Fear of exposing your ideas". As for "Fear of Dying" ND, EI was identified as "Fear" and, for "Low self-esteem" ND, the EIs predictors

were "Quick crying", "Sadness", "Lack of self-confidence" and "Body changes". It is valid to place such EIs predictors as interrelated, since the stigma and prejudice around AIDS lead to social isolation, loneliness, sadness, anxiety, depression, changes in sexuality and even exclusion from the daily practice of leisure. People who are more difficult to accept the disease react to treatment with feelings of sadness, discouragement, disinterest and guilt, leading to the presence of intense psychic suffering and depression. Early diagnosis of depression is extremely important to maintain adherence to antiretroviral therapy and, consequently, to a better prognosis for HIV infection and to improve quality of life. Moreover, because it is a disease that has no cure, it causes such feelings, such as fear of death, low self-esteem and uncertainty about the future[25].

Given this, nurses should optimize actions that promote self-actualization to this clientele, as a way to encourage them to establish new goals and future plans, develop talents and cultivate their potential. The self-realized adult is satisfied with his life and experiences a sense of fullness and contentment. In this sense, the nurse can promote measures of socialization as a round of conversation, group therapy, storytelling, and especially inserting the family in this context[26].

Study limitations

As a limitation of this study, the memory bias of some interviewees is pointed out regarding some information related to the diagnosis and treatment of the disease. Other limitations are related to the identification process of NDs, which is characterized by a subjective analysis in which inductive and deductive tools of researchers are associated with AIDS. However, the study presents innovations regarding the insertion in the new nursing technologies, such as the use of EIs for the establishment of NDs of ICNP®, so that nurses of practice, management, teaching and research can insert in their models of health care.

Contributions for the sectors of Nursing, Health or Public Policy

The associations identified in this study are presented as a contribution to Nursing Practice in the most qualified care for people living with AIDS, since they allowed the analysis of the human responses of these individuals according to their socioeconomic and clinical conditions, providing a better focus of care directed to the real needs of this clientele. Based on this analysis, nurses should pay attention to the social needs of people living with AIDS in planning their care, to respect the individual aspects of each client, and to eliminate or minimize human responses in this population.

CONCLUSION

The study allowed the identification of 74 EIs, but only 31 were validated, and 55 Nursing Diagnoses were elaborated. However, only 19 were considered validated, as they reached the established scores. It is noteworthy that 16 NDs obtained statistically significant associations with their respective EIs. In general, EIs identified as possible predictors involved specific human responses, clinical conditions, and disease-related complications, which allow the early identification of ICNP® NDs from people living with AIDS.

In this sense, it is noted that the study allowed the identification of the EIs predictors for the establishment of ICNP® NCDs for this clientele, which may determine clarity and assertiveness in the establishment of interventions aiming to achieve positive results.

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