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Prevalence of the Nursing Diagnosis Lack of Adherence in People Living with AIDS

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Abstract

Introduction: In the 1990s, the development of highly active combination antiretroviral therapy in the treatment of AIDS was highlighted. The great benefit generated by the use of this treatment was the prolongation of survival of the people who got this disease, since it is no longer considered fatal, becoming a chronic condition. Objective: To identify the prevalence of the nursing diagnosis Lack of Adherence, its defining characteristics and related factors in people living with AIDS, to investigate the association between them and the prevalence rates. Methods: Cross-sectional study with 113 patients in a hospital in northeastern Brazil. For data analysis, the test of Pearson chi-square and Fisher's exact test were used, and also calculated the prevalence rates. Results: Lack of Adherence diagnosis was present in 69% of the sample investigated. The defining characteristics and related factors that are statistically associated with that diagnosis were: lack of adherence behavior, missing scheduled appointments, complications related to development, insufficient skills to implement the system and complex treatment system. The first two characteristics had the highest chances for the development of this diagnosis. Conclusion: The study showed that the diagnostic studied was prevalent in these patients and 3 characteristics and 2 factors showed significant association.

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1. Introduction

Over the past 30 years, the Acquired Immune Deficiency Syndrome (AIDS) has killed more than 35 million people worldwide, regarded as the fifth leading cause of death in adults. It sets up as a major challenge for the healthcare system [1].

In the 1990s, the development of highly active combination antiretroviral therapy in the treatment of AIDS was highlighted. The great benefit generated by the use of this treatment was the prolongation of survival of the people who got this disease, since it is no longer considered fatal, becoming a chronic condition. Despite the improvements generated by this therapy, there are still many difficulties to be overcome. One of these difficulties is the patients' adherence to their treatment, bringing challenges to services and health professionals [1] [2].

Adherence is characterized as the establishment of a joint activity, in which the patient is not a mere follower of medical guidance, but understands and agrees with the recommended prescription. In the people living with AIDS, the continued use of antiretroviral medications reduces the level of viral load, improving the immune conditioning, and allowing a better quality of life [3]. However, some factors interfere with medication adherence, by the use of alcohol, drugs, socioeconomic conditions and the non-acceptance of the new health condition. Thus, there is the need of health professionals develop technologies, to promote adherence to antiretroviral drugs [4].

Understanding such adherence goes through the simple follow-up to the regimen prescribed by health professionals; the identification factors responsible for failures to comply with the treatment are useful, allowing the nurse, as a member of the health team, working more effectively with patients with little adherence and developing strategies to overcome these factors to obtain higher bond rates [2] [3].

Non-adherence to medicines for people living with AIDS is considered one of the most threatening risks for the effectiveness of treatment, at the individual level, and the spread of virus-resistance, at the collective level, being a frequent problem in this population. This statement is corroborated by studies dealing with the profile of Nursing Diagnosis (ND) in people living with AIDS, in which a high prevalence of ND Lack of adherence was found [5]-[8].

According to NANDA-I Taxonomy II, diagnosis of Failure of Adherence is inserted in the domain 1, Health Promotion, and Class 2, Health Control. It is defined as a person's behavior and/or caregiver who fails to coincide with a health promotion plan or therapeutic agreed between the person (and/or family and/or community) and the healthcare professional. In the presence of a health promotion plan or agreed on therapeutic, the behavior of the person or the caregiver is fully or partially non-adherent and can lead to results clinically ineffective or partially effective [9].

It is noteworthy that the ND occurrence may cause the development of kidney, liver, neurological, cardiovascular and cancer complications linked to the abandonment or irregular treatment because the antiretroviral drugs have an important role in viral suppression and maintenance of higher CD4 levels [10].

Thus, it is necessary to identify early the nursing diagnosis Lack of Adherence, so the solutions are sought by the nurses with the patient and his family. Also, a good performance of the nurse is necessary, to accurately determine the defining characteristics and related factors that are associated with the Lack of Adherence, so the accuracy of diagnosis is related to good quality in nursing care.

From this problem, and to justify and endorse the development of the study, a research was carried out based on databases of the Virtual Health Library (BVS): Latin American and Caribbean (LILACS) and International Literature on Health Sciences and Biomedical (Medline); SCOPUS and CINAHL using their descriptors: Nursing diagnosis; Nursing process and Acquired Immunodeficiency Syndrome. It was observed the lack of studies on the prevalence rate of the defining characteristics and related factors of diagnosis lack of adherence in people living with AIDS [5]-[8].

Thus, the relevance is to identify the prevalence of ND Lack of adherence and its components in people living with AIDS to contribute to the establishment of positive and effective nursing interventions for this population.

Moreover, the establishment of the prevalence rate allows ND more reliable inference, more accurately, by estimating the chances of an individual presenting this diagnosis in the presence of determined characteristic and related factors.

From the gaps found, the following question emerged: What is the prevalence of the nursing diagnosis lack of adherence in people living with AIDS? Is there an association between this diagnosis, their defining characteristics, and related factors? What chances these people have with this ND in the presence of these defining characteristics and related factors?

Therefore, to answer the question, the study aimed to identify the prevalence of the nursing diagnosis Lack of Adherence, their defining characteristics, and related factors in people living with AIDS, to investigate the association between them and their prevalence rates.

2. Materials and Methods

This is a descriptive, cross-sectional study with a quantitative approach carried out in a public referral hospital for infectious diseases in northeast Brazil. This hospital is a public institution, and is characterized by being a specialized assistance service, the tertiary level. It has the mission to promote comprehensive health care in infectious diseases in a humane manner, respecting the principles of SUS-Unified Health System, with ethics and social responsibility. The hospital carries out annually about 10.000 consultations and 800 hospitalizations.

The study population consisted of all patients with confirmed medical diagnosis of AIDS identified and assisted in the clinic of the hospital. Thus, the sample was calculated without replacement from the total number of patients who spent more than 30 days without taking their medicine at the hospital, according to data recorded at the pharmacy in 2014, thus constituting a population of 158 people. For sample size calculation, the formula for finite populations was used, considering the level of confidence of 95% ($Z\infty = 1.96$), the sampling error of 5% and the size of the population [11] resulting in a sample of 113 patients.

The selection of patients was obtained by convenience sampling of consecutive type. Therefore, the following inclusion criteria was adopted: having been clinically diagnosed with AIDS, being older than 18 years old, using antiretroviral therapy for at least 6 months, be registered at the hospital clinic in the data collection period. The exclusion criteria were: not to be in mental and emotional conditions to participate in the study. Researchers reported the nursing staff, had medical chart review as well as addressed the patient to verify that the patient had physical and compromised mental condition to conduct an assessment of their general health, level of awareness and guidance. The level of awareness was assessed using the Mini-Mental State Examination.

Researchers have previously reported to the medical records to analyze the whole history of the disease and evolution to verify the psychic condition of patients with AIDS. Then they referred to the nursing staff for additional information about the patients' behavior, their orientation as space and time.

Data were collected from March to September 2014, through a history of the script and physical examination including sociodemographic, clinical and behavioral aspects, after obtaining the consent form and explained to all patients in the study. This instrument was submitted to validation of the content and opinion of 10 teachers who develop studies in Systematization of Nursing Care (SAE). Later, the suggestions made were included in the instrument.

Soon after, a theoretical and practical training was performed to standardize data collection with two students of the Scientific Initiation and three Master's students with a workload of 12 hours per week, developed through expository and dialogued classes and clinical case discussions focusing on an approach to people living with AIDS. After the theoretical stage of the course, there was a practical activity of physical exam simulation in pairs to enable researchers and standardize data collection. After this step, the instrument application was carried out in the form of pre-test in ten patients with AIDS. As there was no need to readjustments, they were included in the study sample.

The preparation of the diagnostic procedure was simultaneously performed with data collection to identify the defining characteristics and related factors/risk according to NANDA-I, version 2012-2014. For the structuring of nursing diagnoses, the steps of the clinical trial Risner were followed: Categorization of data, Identification of data gaps, Grouping of relevant standards data, Comparison of groups' standards norms and concepts, Identification with deviations and health potential, Propositions of etiological relationships [12].

After this stage, the results have gone through the review process in a paired form of the authors to ensure an agreed judgment, aiming greater accuracy. Then, a database was built using Microsoft Excel 2009 software, re-

cording all the variables of the research instruments, as the respective nursing diagnoses, defining characteristics and related factors and the identified risk.

Data were analyzed using descriptive and inferential statistics. In the descriptive analysis, the measures of central tendency and dispersion were used, applying the Shapiro-Wilk test to verify the distribution of normality. There were also the mean and standard deviation calculated for the quantitative variables. In the inferential analysis, the chi-square test of Pearson and Fisher's exact test were used to verify the association of nursing diagnoses with the defining characteristics, and related factors, considering $p < 0.05$, and also calculated the prevalence rates.

Therefore, the research followed the national and international ethical standards in human beings, approved by the Ethics Committee in Research of the Federal University of Rio Grande do Norte (CEP/UFRN) under Opinion 1.146.907.

3. Results

The study included 113 patients with a minimum age of 19 and maximum of 59 years old, with a mean age of 51.16 years old (±12.6), male (82/72.6%), single(75/66.4%), from the interior of the state (63/55.7%), without children (54/47.8%). The variable salary income and study time were asymmetric, indicating that half of the sample had an income of about a minimum wage and had up to eight years of study. The ND Lack of adherence was present in 69% (n = 78) of patients. **Table 1** shows the prevalence of the nursing diagnosis Lack of Adherence of its defining characteristics and related factors.

Based on the data presented in the table below, the defining characteristic that stood out among the patients with the nursing diagnosis studied was the Lack of adherence behavior (78/69%). Have less frequent feature was Complication on the development (45/39.8%). However, the most prevalent among the related factors were the

Table 1. Prevalence of nursing diagnosis lack of adherence of its defining characteristics and related factors in people living with AIDS, Natal/RN, 2015 (n = 113).

Variables	Presence	%	Absence	%
Nursing diagnosis				
Lack of adherence	78	69	35	31
Defining characteristics				
Lack of adherence behavior	78	69	35	31
Missing scheduled appointments	76	67.3	37	32.7
Failure to achieve the results	73	64.6	40	35.4
Complication on the development	68	60.2	45	39.8
Exacerbation of symptoms	65	57.5	48	42.5
Related factors				
Complex treatment system	70	61.9	43	38.1
Insufficient knowledge of the system	70	61.9	43	38.1
Insufficient skills to implement the system	68	60.2	45	39.8
Prolonged duration of the system	68	60.2	45	39.8
Difficulty client-provider relationship	66	58.4	47	41.6
Ineffective provider communication skills	61	53.9	52	46.1
Insufficient teaching skills from the provider	58	51.3	55	48.7
Financial barriers	49	43.3	64	56.7
Inadequate social support	44	38.9	70	61.1

Complex treatment system (70/61.9%) and Insufficient knowledge of the system (70/61.9%). Already the least common were financial barriers (64/56.7%) and insufficient social support (70/61.1%).

The table below shows the associations of the defining characteristics and factors related to the lack of Accession, and their prevalence rates in people living with AIDS.

According to **Table 2**, three defining characteristics and two related factors showed a statistically significant association when related to nursing diagnosis Lack of Adherence (p < 0.05): lack of adherence behavior, Complication on the development, Missing scheduled appointments, Insufficient skills to implement the system and Complex treatment system.

Regarding the prevalence rates of the above characteristics, the chances of people living with AIDS develop the Nursing Diagnosis Lack of Adherence in the presence of these characteristics were approximately 3.5 times for Lack of adherence behavior, 2.6 times for Complication on the development and 1.3 times for Missing scheduled appointments when compared to patients without these characteristics and factors.

Moreover, despite the statistically significant association between related factors of Insufficient skills to implement the system and complex treatment system with ND Lack of adherence, there is no way to establish the magnitude of the association, because the prevalence rate was not statistically significant due to the presence of the value 1 in the confidence interval.

Table 2. Association of defining characteristics and related factors with the nursing diagnosis lack of adherence, Natal/RN, 2015 (n = 113).

Variables	ND lack of adherence			Statistics
Defining characteristics	Present	Absent	Total	
Lack of adherence behavior				
Present	78	00	78	p = 0.001[1]
Absent	00	35	35	RP = 3.582
Total	78	35	113	IC95%: 1.829 - 3.981
Failure to achieve the results				
Present	40	33	73	p = 0.068[**]
Absent	22	18	40	RP = 1.684
Total	60	51	113	IC95%: 0.889 - 2.545
Exacerbation of symptoms				
Present	45	20	65	p = 0.384[**]
Absent	30	18	48	RP = 1.275
Total	75	38	113	IC95%: 0.992 - 2.138
Complication on the development				
Present	58	10	68	p = 0.03[2]
Absent	20	25	45	RP = 2.671
Total	78	35	113	IC95%: 1.729 - 2.873
Missing scheduled appointments				
Present	73	03	76	p = 0.002[1]
Absent	05	32	37	RP = 1.351
Total	78	35	113	IC95%: 1.112 - 2.126
Related factors				

Continued

Insufficient knowledge of the system				
Present	45	25	70	p = 0.151**
Absent	31	12	43	RP = 1.986
Total	76	37	113	IC95%: 0.879 - 2.443
Prolonged duration of the system 68				
Present	58	10	68	p = 0.236**
Absent	20	25	45	RP = 1.982
Total	78	35	113	IC95%: 0.789 - 2.345
Difficulty client-provider relationship				
Present	42	24	66	p = 0.088**
Absent	00	47	47	RP = 1.379
Total	42	71	113	IC95%: 0.989 - 2.241
Insufficient knowledge of the system				
Present	41	20	61	p = 0.314**
Absent	52	00	52	RP = 1.589
Total	93	20	113	IC95%: 0.899 - 2.438
Insufficient teaching skills from the provider				
Present	48	10	58	p = 0.091**
Absent	18	37	55	RP = 1.963
Total	66	47	113	IC95%: 0.684 - 2.227
Financial barriers				
Present	39	10	49	p = 0.318**
Absent	40	24	64	RP = 1.744
Total	79	34	113	IC95%: 0.999 - 2.849
Inadequate social support				
Present	26	18	44	p = 0.468**
Absent	60	09	69	RP = 1.684
Total	86	27	113	IC95%: 0.993 - 2.119
Insufficient skills to implement the system				
Present	58	10	68	p = 0.000*
Absent	20	25	45	RP = 1.450
Total	78	35	113	IC95%: 0.989 - 2.723
Complex treatment system				
Present	48	22	70	p = 0.038**
Absent	30	13	43	RP = 1.684
Total	78	35	113	IC95%: 0.889 - 2.545

[1]Fisher exact test; [2]Pearson's chi-square test; p < 0.05; PR = Prevalence ratio; CI = confidence interval de 95%.

4. Discussion

Prevalence studies of nursing diagnoses give a positive contribution to the practice of nurses in care, facilitating the planning of nursing priority actions for a given population. It is evident also the further strengthening of nursing as a science, by using a rating system of nursing diagnoses proposed by NANDA International, a proper theoretical framework of nursing, helping to improve communication among nurses [7].

In the prevalence of diagnosis lack of adherence, most of the sample had this problem. In this sense, the ND Lack of Adherence is understood as the behavior of a person or caregiver who does not coincide with an agreed promotion or therapeutic plan health [9].

According to the literature, adherence of people living with AIDS with antiretroviral drugs can be facilitated by a clear explanation about the disease, its treatment, secondary prevention, meaning and usefulness of various laboratory tests (such as T lymphocyte count CD4+ and viral load) and the possible adverse effects of the use of antiretroviral drugs in short and long term. With access to information about the disease and ways to promote their independence and autonomy, the patients are strengthened to face adversity brought by illness and treatment [13].

At that time, it is also essential the referral of patients to specialized services to promote the establishment of the link between the patient and the multidisciplinary team of health and the development of strategies to face and new health condition acceptance [13].

Moreover, it is important to note that although the treatment by HAART is critical to the survival of people living with AIDS, it is necessary to adequate guidance on healthy eating, physical activity, abstaining from drug use and especially family involvement in the adherence process [13].

Studies have shown that behaviors indicative of a lack of adherence, complexity of treatment, worsening health condition and failure to keep scheduled appointments are evidenced by the abandonment or interruption of the use of antiretroviral drugs by patients and by non-attendance to health services to receive medicines, consultations or examinations [14]-[19].

In this sense, this study reaffirms these findings, identifying the defining characteristics of people living with AIDS, who have contributed to the establishment of ND lack of adherence, being: lack of adherence behavior, complications related to development, missing scheduled appointments, insufficient skill to implement the system and complex treatment system.

The defining characteristic lack of adherence behavior corresponds to negative attitudes and beliefs related to the disease that affects treatment. Also, feelings of discouragement or denial of the health condition of the individual, resistance or difficulty of behavioral changes and lifestyle are part of the individual's value system that hinders adherence to treatment [20].

For their identification, the presence of the abusive use of alcohol, illegal drugs, smoking, non-acceptance of their new health condition and missed doses of pills at the right time were observed in the studied sample. The drug use can interfere with non-adherence to treatment, given the behavioral and cognitive changes in the individual who lead to the neglect of taking the medicine [14] [15]. Studies showed forgetting as a factor associated with non-adherence to the use of antiretroviral drugs [15]-[17]. Also, serum levels of alcohol can increase the adverse effects of antiretroviral therapy, factors affecting the patient electing to discontinue the pharmacological treatment. Furthermore, forgetting can also result from a depressive disorder, which involves attention and memory deficit [15]-[17].

In this sense, health professionals, including nurses, must implement health education activities, active search for consultations absentees, therapeutic work as conversation meetings, community therapy for people living with AIDS counseled and reflect on the importance of correct use of HAART, enabling the development of skills for understanding the therapeutic system to be little complex [8] [15]-[17].

The second defining characteristic of the diagnosis was complications related to development. For its identification, the presence of signs was identified such as fever and diarrhea, and opportunistic infections such as candidiasis, toxoplasmosis, cytomegalovirus, and dermatitis as well as detectable viral load and CD4+ rate below 200 cells/mm^3. In this sense, research showed that patients with CD4 above 200 cells/mm^3 and an undetectable viral load (<80 copies) were significantly more frequent among adherents than among the non-adherent to treatment [18]. In the progression of the disease, the study showed that mortality rates were higher among individuals identified as non-adherents with the treatment system that adherents [19].

In this perspective, nurses should develop interventions and set goals, whether at the individual or collective

aspect. Among the various actions, there is an active search for patients who abandon treatment for the associated causes be examined, as well as control of the laboratory levels of viral load and CD4+ level.

The defining characteristic Missing scheduled appointments were also present in the sample and showed statistical association with ND Lack of Adherence. For that, aspects such as the difficulty to meet the schedule of consultations and unable to attend the consultations were identified in the interview [8], factors which are often not explained by patients.

Another issue that may affect treatment adherence is in patients with long treatment and who are clinically stable, because they may question the continuity of care as they are in good health [4]. In this sense, the practice of health education should involve all patients, regardless of the time of initiation of treatment. The study found that people living with AIDS and non-adherent have often a lack of consultations, with a greater number of complications related to the disease, in contrast to those held consultations assiduously, reducing hospitalizations [20].

Regarding the defining characteristic Failure to achieve the results, the study shows that is associated with the ingestion of a large amount of daily pills, need to drink plenty of fluids and eat a balanced diet and the possibility of adverse reactions making treatment prone to failure. Study found that patients who received treatment in a single pill a day had significantly better adherence to treatment than patients who received multiple pills a day, enabling the achievement of results [19] [20].

With regard to the defining characteristic Exacerbation of symptoms, a study shows that the worsening of the disease as evidenced by the presence of opportunistic and confirmed disease by biological markers for monitoring disease, characterized by reduced CD4+ T lymphocytes and detectable viral load, are conditions associated with poor adherence to antiretroviral therapy [20].

Related factors that have been identified in people living with AIDS, complementing the diagnosis studied were: complex treatment system, insufficient knowledge of the system, insufficient skills to implement the system, prolonged duration of the system, difficulty client-provider relationship, ineffective provider communication skills, insufficient teaching skills from the provider, financial barriers and inadequate social support.

It is necessary at least three antiretroviral drugs combined, two different classes of drugs, making the complex treatment system to combat HIV. Thus, there is a need for monitoring of a health team to assess the adjustments the body to treatment, side effects and possible difficulties properly follow the recommendations, that adheres to treatment [21].

In this sense, the dialogue with the health professionals is fundamental to the understanding of the treatment system to all doubts of patients be resolved [21]. Moreover, HAART patients need to be encouraged to understand the mechanisms of the disease so that they can adapt to necessary changes in regular and continuous use of therapy and be aware of the requirements that make the complex treatment [22].

Insufficient knowledge of the system and Insufficient skills to implement the system, were mentioned in surveys as factors associated with lack of adherence, resulting in the intake of wrong doses of medication [19]-[21]. One study found as a reason for people living with AIDS not properly adhere to treatment, not ingestion of a dose of medication, being related to the complexity of the therapeutic regimen [20].

Prolonged duration of the system also interfere negatively in membership in view of the changes resulting from prolonged use of therapy. Study found that some changes caused by the use of prolonged treatment, such as anemia, renal complications, metabolic and lipodystrophy were factors related to the abandonment of treatment and consequent lack of membership [22].

The Difficulty client-provider relationship, Ineffective provider communication skills, and Insufficient teaching skills from the provider are also factors that lead to non-adherence. An inappropriate communication is connected to the misuse of the therapeutic regimen scheme. Research suggests it delivered a material with written information and tables with the intake schedules of drugs, thereby enhancing the information passed on verbally. Requiring that this information be provided in a clear and relevant manner, to facilitate retention, which implies deeper issues than just disseminate knowledge [21]. They should be embrace strategies that contribute to decision making, changes in attitudes and behavior, these undoubtedly influenced positively to deepen the bond between the patient and the healthcare team [20].

With regard to financial barriers, problems of economic order are generally more important for people living with AIDS than the urgency to take care of health [22]. The lack of financial conditions also interferes with the feed once the therapeutic treatment requires a balanced diet to minimize side effects, being a negative accession therapy [18]-[20]. Patients face obstacles in moving by public transport and leave your neighborhood to go to

consultation or withdraw the drug, the displacements generate financial costs and delay or absence from work [21].

As Inadequate social support, has a negative impact on the lives of people living with AIDS, since due to the stigma and prejudice makes the disease, they can experience the separation and restriction of social relationships. Since without support or with insufficient support from family, friends and/or affectively significant people tend to have more adherence difficulties [18].

Thus, adherence to antiretroviral treatment must conquer every day and to be effective, people living with AIDS need to recognize the need for treatment to continue to live with the quality of life. Thus, the nurse should be alert to guide and to investigate the factors that may affect adherence, and facilitate the understanding of people living with AIDS as a chronic disease that requires continuous treatment [23].

Thus, some of the nursing activities are noteworthy for the promotion of adherence: to determine the patient's motivation to change, to help the patient to identify strengths and reinforce them, to encourage the replacement of undesirable habits by desirable, and to discuss with the patient/important people the process of behavior modification. Moreover, aiming to improve adherence to treatment of patients, nurses can assess the understanding that the patient has about the disease, offer real information about the treatment, encourage verbalization of feelings, support the use of drugs, help him to identify positive strategies to deal with the limitations and control the necessary changes in lifestyle.

5. Conclusions

Diagnosis Lack of Adherence had a high frequency in the sample investigated. The defining characteristics that are statistically associated with that diagnosis were a lack of adherence behavior, complications related to the development and missing scheduled appointments. The related factors associated with the diagnosis were insufficient skills to implement the system and complex treatment system. Among them, lack of adherence behavior and missing scheduled appointments had the highest chances for the development of this diagnosis.

Among the limitations of the study, it is the fact that the clinical assessment is a subjective process. Before that, the diagnostic process is subjected to uncertainties, bringing implications for the expected results and specific nursing interventions. Furthermore, the implementation and dissemination of this study and other studies related to the topic discussed can subsidize nursing professionals regarding the preparation and implementation of the practice of science, human and holistic nursing, thus, reflections on practice in teaching, research, and extension.

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