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Adherence to antiretroviral therapy by adults living with HIV/aids: a cross-sectional study

Adesão à terapia antirretroviral de adultos vivendo com HIV/aids: um estudo transversal

Adhesión a la terapia antirretroviral de adultos viviendo con VIH/sida: un estudio transversal

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ABSTRACT

Objective: To verify the association between adherence to antiretroviral treatment by adults with HIV/AIDS and sociodemographic factors, social and clinical support. **Methods:** Cross-sectional study, with a quantitative approach. Participation of 230 patients. Questionnaires of sociodemographic characterization, social and clinical support, and assessment of adherence to antiretroviral treatment were used. Descriptive and inferential statistics were performed. **Results:** Adherence was classified as good/adequate. An association with sex, income, employment, and level of education was noted. In social support: having access to health services; communication with health professionals; health education; having support to allow venting/talking about issues; information on HIV/AIDS; and company for leisure. In the clinical profile: non-interruption of the drug treatment due to absence from the service or due to changes in the medical prescription. **Conclusion:** Adherence was classified as good/adequate and especially associated with social support factors, which should be enhanced in clinical practice. **Descriptors:** Highly Active Antiretroviral Therapy; Adherence to Medication; HIV; Acquired Immunodeficiency Syndrome; Social Support.

RESUMO

Objetivo: Verificar a associação entre a adesão ao tratamento antirretroviral de adultos com HIV/aids e os fatores sociodemográficos, apoio social e clínico. **Métodos:** Estudo transversal, com abordagem quantitativa. Participaram 230 pacientes. Utilizaram-se questionários de caracterização sociodemográfica, apoio social, clínico e avaliação da adesão ao tratamento antirretroviral. Realizou-se estatística descritiva e inferencial. **Resultados:** A adesão foi classificada como boa/adequada. Percebeu associação com o sexo, renda, emprego e nível de instrução. No apoio social: ter acesso ao serviço de saúde; comunicação com os profissionais de saúde; educação em saúde; receber apoio para desabafar/conversar; informação sobre HIV/aids; e companhia para o lazer. No perfil clínico: não deixar de tomar os medicamentos por ausência no serviço ou por alteração na prescrição médica. **Conclusão:** A adesão foi classificada como boa/adequada e associada, especialmente, aos fatores de apoio social, os quais devem ser potencializados na prática clínica.
Descritores: Terapia Antirretroviral de Alta Atividade; Adesão à Medicação; HIV; Síndrome de Imunodeficiência Adquirida; Apoio Social.

RESUMEN

Objetivo: Verificar la relación entre la adhesión al tratamiento antirretroviral de adultos con VIH/SIDA y los factores sociodemográficos, apoyo social y clínico. **Método:** Estudio transversal, con abordaje cuantitativo. Participaron 230 pacientes. Utilizaron encuestas de caracterización sociodemográfica, apoyo social, clínico y evaluación de la adhesión al tratamiento antirretroviral. Realizó estadística descriptiva e inferencial. **Resultados:** La adhesión fue clasificada como buena/adecuada. Percibió relación con el sexo, renta, empleo y nivel de instrucción. En el apoyo social: ter acceso al servicio de salud; comunicación con los profesionales de salud; educación en salud; recibir apoyo para desahogar/conversar; información sobre VIH/SIDA; y compañía para el ocio. En el perfil clínico: no dejar de tomar los medicamentos por ausencia en el servicio o por alteración en la prescripción médica. **Conclusión:** La adhesión fue clasificada como buena/adecuada y relacionada, especialmente, a los factores de apoyo social, los cuales deben ser potencializados en la práctica clínica.
Descriptores: Terapia Antirretroviral Altamente Activa; Cumplimiento de la Medicación; VIH; Síndrome de Inmunodeficiencia Adquirida; Apoyo Social.

INTRODUCTION

In tackling HIV, Brazil made a commitment to the World Health Organization (WHO) to reach the 90-90-90 goal by 2020, in which 90% of people with HIV are diagnosed, of those, 90% are in Antiretroviral Therapy (ART) and, among these, 90% have an undetectable viral load. Such a situation requires continuous care by incorporating the timely diagnosis, bonding, monitoring, and periodic examinations by the user, adherence to treatment, and suppression of viral load. To achieve these purposes, care and management methodologies should be adopted for shared care with patients, and this commitment should be extended to the whole society[1].

As for the factors associated with adherence, a literature review identified that individual aspects, such as socioeconomic, psychosocial and health conditions, life habits, neuropsychological aspects, and religiosity, interfere in this process, as well as the characteristics of the treatment, which include medication regimen, adverse effects, period of use, strategies to remind users to take the medication, time since the first ART, diagnosis, and cost[2].

Other items that affect adherence are HIV infection and time of diagnosis, general health conditions, serological status, knowledge about HIV and ART, and having a family member living with HIV; the relationship of the health service through the multidisciplinary team, home visits, the interval between consultations, and the good relationship between professionals and users are also highlighted. Finally, social support, which influences the level of adherence and requires health services to establish effective intervention plans[2].

Indeed, low adherence to ART is a multifactorial and dynamic process due to long-term monitoring, since it requires continuous monitoring, identifying reasons for non-adherence, and the use of appropriate methods for harm reduction[3]. Experience in Brazilian public HIV clinics used monitoring by means of validated questionnaires to identify indicators of non-adherence, which pointed to a scenario with weaknesses in public health services, in the provision of counseling, and guidance on ART[4].

Therefore, it is important to detect early adherence to ART by adults with HIV/AIDS and associated factors in a broader perspective other than simply taking medication. Since there are variations on the level of adherence depending on the researched population, there was little scientific production on the subject in specialized assistance services (SAS). In this sense, the investigation can contribute to encourage routine monitoring of adherence to antiretroviral treatment of patients in this service, from a clinical and scientific standpoint, in the perspective of adequate care to be made available according to the identified reality.

OBJECTIVE

To verify the association between adherence to antiretroviral treatment by adults with HIV/AIDS and sociodemographic factors, social and clinical support.

METHODS

Ethical aspects

The study was approved by the Research Ethics Committee of the Universidade Regional do Cariri (URCA) [Regional University of Cariri]. All participants signed the Free and Informed Consent Form (FICF).

Study design, location, and period

Cross-sectional descriptive study with quantitative approach, developed in an HIV/AIDS SAS, located in a municipality in the southern region of the state of Ceará. Data collection took place from April to September 2016. The steps of this methodology were guided by the STROBE tool.

Population/sample: inclusion and exclusion criteria

The SAS had 560 patients considered to be active, that is, people who sought the service at least once a year and was 18 years of age or more. A confidence level of 95% was adopted, an error margin of 5% and a proportion of favorable results for the population variable of 50%. The sample consisted of 230 participants. Inclusion criteria were being over 18 years old, being active in the service, and being literate. Thirteen patients refused to participate in the study.

Study protocol

Data collection took place in a private room, at the SAS, before participants' medical consultation, carried out by the researcher who also had access to the patients' medical records. The following were used: Questionnaire 1 – A self-applied research instrument for characterization[5] that was adapted for this research, which included the variables: a) sociodemographic and economic (age, sex, ethnicity, level of education, marital status, sexual orientation, family monthly per capita income, employment, awareness of illness at the workplace, and use of legal and illegal drugs); b) social support - relied on a Likert scale to measure the variables, adopting the original score of the scale, determined from 1 to 5 points in ascending order, being them: never (1 point); rarely (2 points); sometimes (3 points); often (4 points); and always (5 points); c) clinical profile: how long ago had they been diagnosed and been receiving HIV treatment; T-CD4 lymphocyte levels and plasma viral load values; line of treatment; had stopped taking the medication due to not having it or due to alterations in the prescription; form of transmission; opportunistic infection; amount of pills taken daily; and lifestyle changes due to treatment. For the categorization of these variables, the following parameters were used: plasma viral load, considering the number of viral copies: undetectable or below 50 copies/mL, from 50 copies/mL to 100 thousand copies/mL, and above 100 thousand copies/ml; T-CD4 cell count, categorized as ≤ 500 cells/mm3 and > 500 cells/mm3[6]; Questionnaire 2 - "Cuestionario para la Evaluación de la Adhesión al Tratamiento Antiretroviral" (CEAT-HIV) [Survey for the assessment of Adhesion to the Antiretroviral Treatment"], version adapted and validated for the Brazilian reality ("Avaliação da adesão ao tratamento antirretroviral" [Assessment of adherence to antiretroviral treatment])[7], being self-administered and having good reliability, high sensitivity, and medium specificity. It consists of 20 questions that address: compliance with treatment; factors that modulate treatment adherence; interaction between professionals and patients; patients' beliefs related to the effort and time required to comply with their treatment; assessment of the severity of side effects; among others. The sum of all items has a minimum of 17 and a maximum of 89 points,

with the classification of the degree of adherence divided into: low/insufficient adherence (gross score ≤ 74; percentile ≤ 49), good/adequate adherence (gross score between 75 and 79; 50-85 percentile), and strict adherence (gross score ≥ 80; percentile ≥ 85).

Analysis of results and statistics

The data were analyzed using descriptive and inferential statistics processed in the Statistical Package for the Social Sciences program (version 22.0). The quantitative variables, of the category and ordinal type, were described by distribution of simple and relative frequencies; and the scalar variables, of the interval type, by the mean and coefficient of variation. Qualitative variables were nominal and ordinal.

The degrees of adherence were determined by the sum of the answers from the CEAT-HIV questionnaire[7], generating the scores and percentiles at three levels. An analysis of the internal consistency of the CEAT-HIV instrument was performed, verified by means of Cronbach's alpha, with values equal to or greater than 0.7 being considered as consistency indicators.

In the bivariate analyses for the association between adherence to antiretroviral treatment (outcome variable) and the sociodemographic, economic, social support and clinical profile variables, the chi-squared test and, when appropriate, Fisher's exact test were used, both for 95% confidence level intervals and statistical significance of $p < 0.05$.

RESULTS

Two-hundred and thirty adults living with HIV/AIDS participated in the study; the majority were male (58.3%) and heterosexual (73.1%), aged between 18 and 39 years (49.6%); brown (66.1%); lived with spouse/partner (41.3%), with an average of 1.85 children per person. Most had not completed elementary school (31.3%), were unemployed (67.2%), and had a family income of up to two minimum wages (72.1%, average of 1.64, SD = 1.45), with an average dependent of 3.22 people. As for drugs, 93.9% stated that they did not use illicit drugs; and 63% did not consume alcoholic beverages. Regarding the clinical aspects, 53.9% had lived for a maximum of five years with the diagnosis of the disease, and 61.3% had the same treatment time; 51.6% showed a T-CD4 value of up to 500 cells/mm3; and 71.7% were in the first line of treatment.

Regarding the degree of adherence to treatment, most participants had a good/adequate adherence score (44.3%); for 97 patients, adherence was classified as low/insufficient (42.2%); and 31 patients (13.5%) were classified as having strict adherence. The general average had a gross score of 76.51, a value that classifies adherence to ART as good/adequate, with Cronbach's alpha equal to 0.7 (Table 1).

The variable "sex" was significant (p = 0.005) for adherence to ART, in which the male population obtained good/adequate (47.8%) and strict (16.4%) ratings when compared to the female (low/insufficient = 51%). Most had not completed elementary school, a condition that impacted treatment adherence (low/insufficient score; (p = 0.010). Having income showed a statistically significant relationship to adherence (p = 0.034), showing that the lower the economic conditions, the lower the adherence score. The employment situation interfered with adherence to ART (p = 0.007): the non-employed participants, for the most part, had low/insufficient adherence, and the employed obtained good/adequate and strict adherence (Table 2).

There was an association between adherence to ART and access to SAS (p = 0.005), in which 65.5% of participants considered it difficult (low/insufficient). Access to a communication channel with health professionals was significant (p = 0.005) for most, with good/adequate (43.3%) and strict (15.4%) adherence; regarding receiving health education to encourage and continue treatment (p = 0.013), among those who answered "never", 44% had low adherence, and among those who attended, 61.1% had good/adequate adherence to ART. More than half always had support to vent/talk about their health problems (p = 0.002) with a good/adequate (46.2%) and strict (18.4%) adherence score; received information to improve the level of knowledge about HIV/AIDS (p = 0.039) for 41.3% with good/adequate adherence; half got fun and leisure time support (p < 0.001), with 53% showing good/adequate adherence; and 20.9%, strict (Table 3).

The clinical profile of the participants was associated with adherence to ART when they did not cease taking their medications due to the lack of service (p = 0.039), in which the majority stated that this in fact did not occur (69.6%) and obtained an adherence score of good/adequate (47.5%) and strict (15.6%). There was an association between not stopping due to changes in the medical prescription (p = 0.018), obtaining good/adequate adherence scores (46.3%), and those who ceased to take them had low/insufficient adherence (65.5%) (Table 4).

DISCUSSION

In assessing adherence to ART, the present study showed that there was good/adequate adherence, which seems to vary based on sociodemographic and economic factors, such as sex (male), income (up to two minimum wages), and not finishing elementary school. Studies with similar classifications pointed at the need to encourage clinical follow-up[8-10] to promote adherence.

Table 1 – Assessment of adherence to antiretroviral treatment (CEAT-HIV) of adults living with HIV/AIDS, municipality in the southern region of the state of Ceará, Brazil, 2016

Adherence	n	Average	Standard deviation	95% confidence interval for mean		Minimum	Maximum
				Inferior limit	Superior limit		
1 - Low/insufficient (Gross score up to 76)	97	71.20	4.261	70.34	72.05	56	76
2 - Good/adequate (Gross score from 77 to 82)	102	79.13	1.645	78.80	79.45	77	82
3 - Strict (Gross score of 83 or higher)	31	84.52	1.610	83.93	85.11	83	88
Total	230	76.51	5.730	75.76	77.25	56	88

Table 2 – Association between sociodemographic characteristics and adherence to antiretroviral treatment of adults living with HIV/AIDS, municipality in the southern region of the state of Ceará, Brazil, 2016

Variables	n	%	Adherence						*P*
			Low/ Insufficient		Good/ Adequate		Strict		
Sex									
Male	134	58.3	48	35.8	64	47.8	22	16.4	0.005*
Female	96	41.7	49	51.0	38	39.6	9	9.4	
Color/ethnicity									
White	62	27.0	29	46.8	25	40.3	8	12.9	
Black	10	4.3	3	30.0	4	40.0	3	30.0	0.715
Yellow	5	2.2	1	20.0	3	60.0	1	20.0	
Brown	152	66.1	64	42.1	69	45.4	19	12.5	
Indigenous	1	0.4	0	0.0	1	100.0	0	0.0	
Age									
18 to 39 years	114	49.6	50	43.8	46	40.3	18	15.9	0.890
40 to 59 years	94	40.8	39	41.5	43	45.7	12	12.8	
≥ 60 years	22	9.6	8	36.3	6	27.4	8	36.3	
Marital Status									
Married	95	41.3	36	37.9	41	43.1	18	19.0	
Divorced	84	36.5	35	41.7	40	47.6	9	10.7	0.354
Widowed	51	22.1	23	45.1	24	47.1	4	7.8	
Sexual Orientation									
Heterosexual	168	73.1	69	41.1	79	47.0	20	11.9	0.569
Homosexual	47	20.5	20	42.5	18	38.3	9	19.2	
Bisexual	15	6.4	7	46.6	5	33.3	3	20.1	
Income									
Without income	9	3.9	6	66.7	3	33.3	0	0.00	
Less than 1 minimum wage salary	110	47.8	58	52.7	39	35.5	13	11.8	
From 1 to 2 salaries	56	24.3	21	37.5	28	50.0	7	12.5	0.034*
2 to 3 salaries	29	12.6	6	20.7	19	65.5	4	13.8	
3 to 5 salaries	19	8.3	4	21.1	10	52.6	5	26.3	
5 to 10 salaries	5	2.2	2	40.0	2	40.0	1	20.0	
10 to 20 salaries	2	0.9	0	0.0	1	50.0	1	50.0	
Employed									
No	154	67.2	77	50.0	62	40.3	15	9.7	
Yes, registered	23	10.0	5	21.7	14	60.9	4	17.4	0.007*
Yes, unregistered	53	22.7	15	28.4	25	47.1	13	24.5	
If employed, does anyone in the workplace know of your diagnosis?									
Yes	13	17.1	3	23.1	6	46.2	4	30.7	0.058
No	63	82.9	19	30.2	34	54.0	10	15.8	
Use some type of drugs?									
Yes	14	6.1	9	64.3	4	21.4	1	8.3	0.058
No	216	93.9	87	40.3	99	45.8	30	13.9	
Drink alcohol?									
Yes	85	37.0	39	45.9	35	41.2	11	12.9	0.679
No	145	63.0	58	40.0	67	46.2	20	13.8	
Level of education									
Incomplete elementary school	72	31.3	36	50.0	25	34.7	11	15.3	
Elementary school	28	12.2	9	32.1	16	57.2	3	10.7	
Incomplete high school	24	10.4	13	54.2	8	33.3	3	12.5	
High school	53	23.1	21	39.6	27	50.9	5	9.5	
Incomplete higher education	16	7.0	3	18.8	11	68.8	12	12.4	0.010*
Higher education	15	6.5	5	33.3	5	33.3	5	33.3	
Master's degree	1	0.4	0	0.0	0	0.0	1	100.0	
Doctorate degree	1	0.4	0	0.0	0	0.0	1	100.0	
Undetermined	20	8.7	9	45.0	10	50.0	1	5.0	

**Chi-squared test*

Table 3 – Association between social support and adherence to antiretroviral treatment for adults with HIV/AIDS, municipality in the southern region of the state of Ceará, Brazil, 2016

Variables	n	%	Adherence						*p*
			Low/ Insufficient		Good/ Adequate		Strict		
Obtaining health monitoring in the specialized HIV/AIDS care service									
Difficult	12	5.2	7	58.3	3	25.0	2	16.7	
More or less	42	18.4	21	50.0	19	45.2	2	4.8	0.223
Easy	176	76.5	69	39.2	80	45.5	27	15.3	

To be continued

Table 3

Variables	n	%	Adherence						*p*
			Low/ Insufficient		Good/ Adequate		Strict		
Access to the monitoring service									
Difficult	29	12.6	19	65.5	7	4.2	3	10.3	0.005*
More or less	46	20.0	21	45.7	21	45.7	4	8.6	
Easy	155	67.4	57	36.8	74	47.7	24	15.5	
Communication between health professionals									
Difficult	4	1.7	4	100.0	0	0.0	0	0.0	
More or less	24	10.5	9	37.5	15	62.5	0	0.0	0.024*
Easy	202	87.8	84	41.6	87	43.0	31	15.4	
Participation in some HIV/AIDS treatment group within the service									
Yes	22	9.6	14	63.6	7	31.8	1	4.5	0.079
No	208	90.4	82	39.4	96	46.1	30	14.5	
Do you receive support from someone, facilitating health care (e.g., taking care of the children on consultation days, taking care of the house or other situation)?									
Never	52	22.6	27	51.9	20	38.5	5	9.6	
Rarely	2	0.9	1	50.0	1	50.0	0	50.0	
Sometimes	27	11.7	14	51.9	11	40.7	2	7.4	0.352
Often	11	4.8	4	36.4	7	63.6	0	0.0	
Always	138	60.0	51	37.0	63	45.6	24	17.4	
Do you get financial support from someone, such as splitting household expenses, money received or borrowed?									
Never	135	58.7	62	46.0	55	40.7	18	13.3	
Rarely	7	3.0	3	42.8	2	28.6	2	28.6	
Sometimes	15	6.5	5	33.4	8	53.3	2	13.3	0.678
Often	7	3.0	1	14.3	5	71.4	1	14.3	
Always	66	28.8	26	39.4	32	48.5	8	12.1	
Do you get support from someone who helps you cope with your health problems?									
Never	53	23.1	28	52.8	19	35.8	6	11.4	
Rarely	3	1.3	2	66.7	0	0.0	1	33.3	
Sometimes	26	11.3	13	50.0	11	42.3	2	7.7	0.328
Often	6	2.6	1	16.7	4	66.7	1	16.7	
Always	142	61.7	53	37.3	68	47.9	21	14.8	
Does the service that tracks your progress offer all the medications you need for treatment?									
Never	0	0.0	0	0.0	0	0.0	0	0.0	
Rarely	1	0.4	0	0.0	0	0.0	1	100.0	
Sometimes	1	0.4	0	0.0	1	100.0	0	0.0	0. 216
Often	7	3.0	2	28.6	4	57.1	1	14.3	
Always	221	96.2	95	43.0	97	43.9	29	13.1	
Does the service provide all the required exams free of charge?									
Never	0	0.0	0	0.0	0	0.0	0	0.0	
Rarely	1	0.4	1	100.0	0	0.0	0	0.0	
Sometimes	18	7.8	5	27.8	10	55.5	3	16.7	0.592
Often	6	2.6	1	16.7	3	50.0	2	33.3	
Always	205	89.2	90	43.9	89	43.4	26	12.7	
Does the service offer medical consultations for monitoring the treatment?									
Never	1	0.4	0	0.0	1	100.0	0	0.0	
Rarely	0	0.0	0	0.0	0	0.0	0	0.0	
Sometimes	0	0.0	0	0.0	0	0.0	0	0.0	0.592
Often	7	3.1	2	28.6	3	42.8	2	28.6	
Always	222	96.5	95	42.8	98	44.1	29	13.1	
Does the service offer other types of professional follow-up (e.g., psychologist, social worker, others)?									
Never	112	48.7	52	46.4	46	41.1	14	12.5	
Rarely	13	5.7	4	30.8	8	61.5	1	7.7	
Sometimes	69	30.0	30	43.5	33	47.8	6	8.7	0. 197
Often	6	2.6	1	16.7	3	50.0	2	33.3	
Always	30	13.0	10	33.3	12	40.0	8	26.7	
Does the service carry out health education actions encouraging the continuity of treatment (e.g., lectures, conversation circles, etc.)?									
Never	141	61.3	62	44.0	67	47.5	12	8.5	
Rarely	17	7.4	6	35.3	8	47.1	3	17.6	
Sometimes	36	15.7	19	52.8	11	30.5	6	16.7	0.013*
Often	18	7.8	4	22.2	11	61.1	3	16.7	
Always	18	7.8	6	33.3	5	27.8	7	38.9	

To be continued

Table 3 (concluded)

Variables	n	%	Adherence						p
			Low/ Insufficient		Good/ Adequate		Strict		
Do you receive support from someone who makes you feel valued and helps improve your self-esteem?									
Never	31	13.5	14	45.2	16	51.6	1	3.2	
Rarely	4	1.7	3	75.0	1	25.0	0	0.0	
Sometimes	32	13.9	17	53.1	13	40.6	2	6.3	0. 542
Often	5	2.2	2	40.0	2	40.0	1	20.0	
Always	158	68.7	62	39.2	72	45.6	24	15.2	
Do you receive support from someone with whom you can vent or talk about issues related to your illness?									
Never	55	24.0	32	58.2	21	38.2	2	3.6	
Rarely	8	3.4	3	37.5	4	50.0	1	12.5	
Sometimes	32	14.0	15	46.9	16	50.0	1	3.1	0.002
Often	5	2.1	1	20.0	1	20.0	3	60.0	
Always	130	56.5	46	35.4	60	46.2	24	18.5	
Do you receive support from someone who makes you feel socially integrated?									
Never	53	23.1	30	56.6	20	37.7	3	5.7	
Rarely	4	1.7	2	50.0	1	25.0	1	25.0	
Sometimes	31	13.5	15	48.4	12	38.7	4	12.9	0.165
Often	6	2.6	1	16.7	3	50.0	2	33.3	
Always	136	59.1	49	36.0	66	48.5	21	15.5	
Do you receive information that helps you to improve your level of knowledge about HIV/AIDS?									
Never	18	7.9	13	72.2	4	22.2	1	5.6	
Rarely	14	6.1	9	64.3	3	21.4	2	14.3	
Sometimes	75	32.6	35	46.7	32	42.7	8	10.6	0.039*
Often	28	12.1	8	28.6	15	53.5	5	17.9	
Always	95	41.3	31	32.6	49	51.6	15	15.8	
Do you receive support from someone when you need some company to have fun or do leisure activities?									
Never	65	28.3	35	53.8	28	43.1	2	3.1	
Rarely	9	3.9	8	88.9	0	0.0	1	11.1	
Sometimes	34	14.8	22	64.7	10	29.4	2	5.9	0.001
Often	7	3.0	2	28.6	3	42.9	2	28.5	
Always	115	50.0	30	26.1	61	53.0	24	20.9	

**Chi-squared test.*

Table 4 - Association between the clinical profile and adherence to antiretroviral treatment of adults with HIV/AIDS, municipality in the southern region of the state of Ceará, Brazil, 2016

Variables	n	%	Adherence						p
			Low/ Insufficient		Good/ Adequate		Strict		
Time since diagnosis									
Up to 5 years	124	53.9	49	39.5	54	43.5	21	17.0	0.502
6 to 10 years	59	25.7	27	45.8	25	42.4	7	11.8	
11 years or more	47	20.4	20	42.6	24	51.1	3	6.3	
Time in treatment									
Up to 5 years	141	61.3	60	42.5	59	41.8	22	15.7	0.293
6 to 10 years	50	21.7	24	48.0	20	40.0	6	12.0	
11 years or more	39	17.0	13	33.3	23	59.0	3	7.7	
T-CD4 Value									
Up to 500 cell./mm^3	116	51.8	53	45.7	50	43.1	13	11.2	0.354
500 cell./mm^3 or higher	108	48.2	40	37.0	51	47.2	17	15.7	
Viral Load Value									0.888
Up to 50 copies/mL	168	73.0	64	38.1	81	48.2	23	13.7	
From 50 to 100 thousand copies/mL	53	23.1	25	47.2	21	39.6	7	13.2	
> 100 thousand copies/mL	9	3.9	4	4.44	21	4.44	1	11.2	
Line of Treatment									0.062
First line	165	71.7	71	43.0	67	40.6	27	16.4	
Second line	65	28.3	26	40.0	35	53.8	4	6.2	
Stopped taking the drugs because did not get them (were not available in the service)									
Yes	70	30.4	38	54.3	26	37.1	6	8.6	0.039*
No	160	69.6	59	36.9	76	7.5	25	15.6	
Stopped taking the medication due to a change in prescription									
Yes	29	12.6	19	65.5	9	31.0	1	3.5	0.018*
No	201	87.4	78	38.8	93	46.3	30	14.9	

To be continued

Table 4 (concluded)

Variables	n	%	Adherence						p
			Low/ Insufficient		Good/ Adequate		Strict		
Form of transmission									0.628
Maternal transmission	4	1.7	1	25.0	2	50.0	1	25.0	
Blood transmission	2	0.9	1	50.0	1	50.0	0	0	
Injectable drugs	1	0.4	1	1000	0	0.0	0	0	
Sexual transmission	164	71.3	70	42.7	75	45.7	17	11.6	
Unknown	59	25.7	24	40.7	23	39.0	12	20.3	
Did you have an opportunistic infection?									0.335
Yes	85	37.0	40	47.1	36	42.4	9	10.5	
No	145	63.0	54	37.2	69	47.6	22	15.2	
Number of pills taken daily									0.584
1 pill	86	37.4	40	46.5	34	39.5	12	14.0	
2 to 4 pills	93	40.4	33	35.5	45	48.4	15	16.1	
5 to 7 pills	48	20.9	22	45.8	22	45.8	4	8.4	
8 to 10 pills	3	1.3	2	66.7	1	33.3	0	0.0	
Had a change in lifestyle due to treatment									
Yes	151	65.7	65	43.0	69	45.7	17	11.3	0.393
No	79	34.3	32	40.5	33	41.8	14	17.7	

**Chi-squared test and Fisher's exact test.*

Similar characteristics have also been identified in other Brazilian studies[8-11], such as the one carried out in Fortaleza, in which the participants had an income below four minimum wages and obtained lower treatment adherence scores[12]. Regarding income, studies have reported an association between adherence, education level, and understanding of the disease[10,13]. In this context, the SAS team must adopt strategies that allow recognition of adherence, with a view to enhancing it and ensuring substantial monitoring of patients' lives.

Regarding access to SAS, an association with adherence was identified, so that the majority who had difficulty accessing it presented low adherence to ART. A study points out that the flexibility of hours, attention directed to each different population group and multidisciplinary care are essential qualities of a service[10].

Likewise, adequate/good adherence seems to be determined also by social support, which was perceived by PLHIVs through good communication with health professionals. Additionally, the participation of health education allowed the transfer of treatment incentives that would improve the level of knowledge about HIV/AIDS, especially for those who presented good/adequate adherence. A study in Brasília shows that low/insufficient adherence to ART has, as barriers, the lack of knowledge/scarcity of information about the medication[9].

In the context of care for PLHIVs, nurses reported interconnecting health-related topics through educational interventions, sharing knowledge on illnesses, treatment, and the ability to promote adherence, as well as through the effort to build a therapeutic relationship, mobilize social and health resources for the management of ART and HIV care[14]. In fact, access, information provision, bonding, and interaction with the health team must involve PLHIVs as conscious and participatory beings in the process of adhering to treatment, in self-care, and in the autonomy to seek their rights, goods, and services.

In the present study, patients found social support via the service when they needed to talk about their health problems. A study carried out in a family health team, in Rio de Janeiro, evaluated the presence of depressive symptoms in people with HIV/AIDS and highlighted that emotional support can be decisive for accepting the diagnosis and protecting life[15]. In view of the above, health professionals must be trained to meet this expectation of PLHIV/family members through intervention and intersectoral actions that guarantee the management of care.

Still within the scope of social support, leisure activity appeared as a potential for adherence to treatment. A study carried out in São José dos Pinhais, state of Paraná, points out that availability and satisfaction with social support increases the chances of adherence to treatment[16]. These aspects can be identified during the monitoring of adherence to treatment, considering its broader aspect, as well as requiring the involvement of community institutions to guarantee social support in the health care and leisure activities of PLHIVs.

In the clinical variables, it was identified that there was no absence of ARVs; and, even in the face of changes in medical prescription, patients who had good/adequate adherence had the autonomy to maintain self-care and the continuity of medication. This situation was found in a study carried out in Alto da Parnaíba, state of Minas Gerais, which identified stable behavior in more than half of the patients during medication dispensing[17].

In the present study, other factors, such as time of diagnosis, increase in TCD4 cell count and viral load, were not associated with greater adherence to treatment, unlike another study with similar investigation[10]. In fact, health professionals, especially nurses, must continually assess adherence in its multiple aspects, thus guaranteeing health care and respecting the individuality and vulnerabilities of the profiles they serve in the scope of the health service.

This challenge in policies to cope with the epidemic and in research involving adherence to ART is due to the lack of a gold standard measure for the quantification of adherence, which makes it difficult to analyze the existing realities[4,10]. In this sense, it is up to the SAS to monitor adherence, in its routine, to enable the implementation of actions that qualify clinical conduct.

Finally, it is reinforced that the early detection of non-adherence to ART in health services must become essential, requiring knowledge of direct and indirect measures by health professionals to adopt interventions in the perspective of promoting, monitoring, and improving the quality of life of PLHIVs.

Study limitations

As a limitation, the indirect measurement of adherence to ART through selfreporting is pointed out, which may limit the generalization of results.

Contributions to the field of Nursing

In this work, the results can support measures to monitor adherence to treatment in a broader perspective and are important in terms of the work process to enhance social support and meet the health needs of this population.

CONCLUSION

This study made it possible to assess the association between adherence to ART for adults living with HIV/AIDS and the sociodemographic, economic, clinical, and social support aspects of an SAS, revealing a good/adequate degree of adherence. Especially for social support, patients considered aspects related to access to the service, good communication with health professionals, having health education actions and information about HIV/AIDS, as well as being able to vent about their health problems.

The observed associations indicate the need for the SAS to contribute to the shared care with patients and the formation of a support group/network that both can provide effective responses aimed at promoting adherence and meeting the health needs of adult patients.

It is emphasized that, for monitoring, direct and indirect alternatives should be sought, considering the complexity of adherence and care centered on individual aspects and vulnerabilities of groups that need interventions to promote self-care, prevention of opportunistic diseases, and adequate follow-up.

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