

## Factors associated with non-adherence to antiretroviral therapy in adults with AIDS in the first six months of treatment in Salvador, Bahia State, Brazil

Fatores associados à não adesão aos antirretrovirais em adultos com AIDS nos seis primeiros meses da terapia em Salvador, Bahia, Brasil

Factores asociados a la no adherencia a la terapia antirretroviral en adultos con SIDA en los primeros seis meses de tratamiento en Salvador, Bahia, Brasil

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### Abstract

*The control of viral replication is essential in the highly active antiretroviral therapy (HAART), and adherence to therapy is instrumental for such control. Individual and external factors influence adherence to the use of antiretroviral (ARV) drugs. This is a cross-sectional study to investigate factors associated with non-adherence to HAART in AIDS patients in Salvador, Bahia State, Brazil, with age  $\geq 13$  years and first prescription in 2009. Data was collected from patient charts and pharmacy records. From a total of 216 patients, 65.3% were males; mean age  $37.8 \pm 9.5$  years; single, 67.9%; heterosexual, 64%; more than 8 years of school education, 65.3%; alcohol users, 61.5%; non-smokers, 75.1% or non-illicit drug users, 93.7%. A proportion of 94% started ARV therapy with TCD4+  $< 350$  cells/mm<sup>3</sup>; 61.8% were symptomatic; and 68.4% had an adverse drug reaction. The prevalence of non-adherence was 25%. The variables associated were: longer time between HIV infection and AIDS (aOR = 3.9), adverse drug reaction (aOR = 2.4), under 34 years of age (aOR = 2.2), less than 8 years of school education (aOR = 2.2) and illicit drugs use (aOR = 2.6). A high non-adherence rate is an important problem within the first six months of HAART.*

*Medication Adherence; Anti-Retroviral Agents; Acquired Immunodeficiency Syndrome*

### Resumo

*O controle da replicação viral é essencial na terapia antirretroviral altamente potente (TARV) e a adesão ao tratamento é o fundamento para esse controle. Fatores individuais e externos influenciam a adesão aos antirretrovirais (ARV). Estudo transversal para investigar fatores associados à não adesão à TARV, em indivíduos com AIDS em Salvador, Bahia, Brasil, com idade  $\geq 13$  anos e primeira prescrição em 2009. Dados coletados em prontuários e registros da farmácia. Dos 216 pacientes, 65,3% eram homens; idade média  $37,8 \pm 9,5$  anos, solteiros 67,9%; heterossexuais 64%;  $> 8$  anos de estudo 65,3%, etilistas 61,5% e não relatou tabagismo 75,1% ou uso de drogas 93,7%. Iniciaram a TARV com TCD4+  $< 350$  células/mm<sup>3</sup> 94%, 61,8% sintomáticos e 68,4% apresentaram reação adversa ao medicamento. Prevalência de não adesão 25%. Variáveis associadas: maior tempo entre o diagnóstico de infecção pelo HIV e a AIDS (aOR = 3,9), reação adversa ao medicamento (aOR = 2,4), idade menor que 34 anos (aOR = 2,2), menos que 8 anos de estudo (aOR = 2,2) e uso de drogas (aOR = 2,6). A alta taxa de não adesão é um problema importante nos seis primeiros meses da TARV.*

*Adesão à Medicação; Antirretrovirais; Síndrome de Imunodeficiência Adquirida*

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## Introduction

Since the emergence of the first cases of AIDS, in the early 1980s, to date, the number of cases increased significantly; the global estimate is that 35.3 (32.2-38.8) million people were living with AIDS in 2012. Despite the prevalence, however, there was a decrease of 33% in the incidence, that lowered from 3.4 (3.1-3.7) million in 2001 to 2.3 (1.9-2.7) million in 2012; similarly, the number of deaths by AIDS declined from 2.3 (2.1-2.6) million in 2005 to 1.6 (1.4-1.9) million in 2012<sup>1</sup>.

In Brazil, it was estimated for 2012 that 718,000 people were living with AIDS, and in that year alone 39,185 new cases of AIDS were reported, with a mortality coefficient of 5.5 per 100,000 inhabitants, and a total of 11,896 deaths from AIDS<sup>2</sup>.

The efficiency of the highly active antiretroviral therapy (HAART) for the human immunodeficiency virus (HIV) is already well established in the scientific literature, but its effectiveness depends particularly on the adherence of patients to antiretroviral drugs<sup>3,4,5</sup>. Studies indicate that a high rate of adherence to antiretroviral therapy is necessary to reduce HIV replication in the circulating blood<sup>6</sup>. Much has been done to reduce morbidity and to maintain the quality of life of HIV-positive individuals<sup>7,8</sup>. Studies based on viral suppression indicate that for an AIDS patient to reach viral suppression, the proportion of adherence to therapeutic schemes should be at least, 80%<sup>9,10</sup>.

Non-adherence or low adherence to HAART implies in failure of the basic treatment schemes. This may indicate the need for therapeutic schemes which are considered in Brazil as rescue therapy, which is more complex and typically requires a higher number of tablets. It might be considered a threat in both individual and public plans, by respectively compromising the effectiveness of drug therapy, and favoring dissemination of virus that are resistant to the drugs available, in addition to impacting public policies on antiretroviral drug provision, and the health system as a whole<sup>5,11,12,13,14,15</sup>.

Lack of adherence among therapy users also impairs the immune system, which is reflected in low LTCD4+ levels, leading to progression of the condition to AIDS, and increased chances of opportunistic infections<sup>14,16</sup>.

The follow-up of HIV/AIDS patients in health-care services has shown that people who use these drugs do not do so regularly<sup>17</sup>. The Brazilian Consensus for Antiretroviral Therapy<sup>18</sup> (p. 31) states that adherence "*is not a linear process, there are difficulties over time, and all users undergo times of higher or lower adherence*". There-

fore, being adherent is not a characteristic, but a condition of the user.

In accordance with Carvalho et al.<sup>19</sup>, adherence to antiretroviral (ARV) therapy is the effective use of drugs as prescribed by the health practitioner. It is directly related to acceptance of the disease and is influenced by the sociocultural setting of the individual<sup>14,19</sup>.

For the Brazilian Ministry of Health, adherence is a dynamic and multifactorial process that includes physical, psychological, social, cultural and behavioral aspects<sup>20</sup>. However, there are not uniform criteria for adherence to antiretroviral therapy. Those that study HAART have adopted different types of methods and definitions of adherence. Adherence may be measured by direct and indirect methods. In the former, the directly observed therapy (DOT), serum levels of antiretroviral drugs or their metabolites are observed. This is an expensive method, and measures recent adherence, and is the only way to directly assess the amount of drugs taken. In the indirect method, adherence is assessed through interviews, patient self-reporting, pharmacy records, and tablet counting<sup>21,22,23</sup>.

An epidemiological study held in 27 health-care facilities in the state of São Paulo, Brazil, with 8,580 users found a prevalence of adherence of 69%<sup>11</sup>. The same author carried out another study to assess adherence in Brazil, in which seven states of the country were included, and 87,000 subjects were investigated. In this study, a prevalence of 75% of adherence was found among patients seen in the health-care facilities assessed<sup>24</sup>.

Factors that influence adherence to HAART include those related to the individuals themselves, the presence of morbid conditions, the prescribed HAART therapy, and the health-care clinic that serves the patient<sup>7,11,12,19,25,26,27</sup>. Bonolo et al.<sup>28</sup> mentioned the relation between non-adherence with socio-demographic characteristics, access to and use of health services, psychosocial factors, perception of the disease, and treatment-related factors. Silva et al.<sup>29</sup> found an association between non-adherence and use of alcohol, low family income, and time of AIDS diagnosis between 1 and 3 years.

Brito et al.<sup>12</sup> suggest that non-adherence is a critical problem over the first six months following initiation of ARV therapy in previously untreated patients, with low school education, and particularly among those with history of psychiatric treatment and use of licit or illicit drugs up to one year prior to HAART initiation.

Even though non-adherence prevalence and implications have become more and more

known<sup>30,31</sup>, studies about this issue are still new and scarce in Brazil, particularly in the North-eastern Region. Therefore, the aim of this study was to investigate factors related to non-adherence to HAART by HIV/AIDS patients in the first six months of treatment.

## Methods

The health-care unit where this study was carried out is a public facility of the Brazilian Unified National Health System (SUS) that belongs to the State of Bahia's Health Department (SESAB), and is connected to the Health Comprehensive Care Superintendency (SAIS); it is located in the Garcia district, Salvador; and promotes activities related to the diagnosis, care-delivery and research, with particular focus on patients with sexually transmitted diseases or who are positive for HIV, the AIDS-causing virus; the goal is to ensure a care of excellence and improve the quality of life of the patients.

This is a cross-sectional study of patients seen at the State Health Center Specialized in Diagnosis, Care and Research (CEDAP), the reference health facility of the care of HIV/AIDS patients in the city of Salvador.

In CEDAP, 3,270 cases of AIDS were reported between 2000 and 2012, with 332 in 2012 alone. This figure represents 40% of all cases of AIDS reported in the state of Bahia. Of the 332 cases, 201 (60.6%) were male patients, with a male/female ratio of 1.5<sup>32</sup>.

Between January 2<sup>nd</sup> and December 30<sup>th</sup>, 2009, 281 virgin ARV-treatment AIDS patients registered at the unit were referred to the pharmacy for their first HAART prescription. Out of this total, 216 adult patients aged 13 and older, of both sexes, had their data collected for a period of at least six months.

Of the 281 patients that met the inclusion criteria for the study, 6.4% (18) were transferred to other ARV dispensing facilities in less than six months after starting the treatment. Among these, 1.8% (five) died within six months after initiating HAART; for 1.4% (four) it was not possible to collect the necessary data for the analysis, as they were seen by practitioners who did not work at that facility; and 38 patients (15%) abandoned treatment after its initiation, and did not collect the drugs for three or more months after the scheduled date. Thus, data of 216 patients were analyzed.

Data were recorded on a specific form, adapted from a data collection instrument developed by Brito et al.<sup>12</sup>. To fill out the forms, the medical chart of each patient and the individual drug dis-

penation records from the facility's pharmacy were reviewed.

To ensure the measurement of non-adherence of all the patients included in the study, data were collected until June 30<sup>th</sup>, 2010. This outcome variable was constructed based on the pharmacy's drug dispensation records, according to the dates scheduled for each patient. For the first collection of drugs, the date of the first dispensation after ARV prescription by the practitioner was considered. A seven-day delay per month for the collection of drugs was allowed. For each patient, a binary indicator was constructed with "0" and "1" values to classify adherence status. The "0" value was failure to show up at the pharmacy to collect the drugs prescribed on the scheduled date; the "1" value meant going to the pharmacy on the scheduled date. For each patient, at the completion of a six-month follow-up, an index ranging from 0 to 6 was obtained from the sum of the binary indicator. For analytical purposes, patients were grouped in two categories: "adherence" – for those whose score was  $\geq 5$ , and "non-adherence" – for those with score  $< 5$ .

The independent variables were classified in three groups: socio-demographic (age, sex, marital status, sexual orientation, years of school education, occupation/income status, smoking, use of alcohol, use of illicit drugs); medical (counting of TCD4+ cells at the beginning of HAART, initiation of HAART with symptoms, time between HIV diagnosis and AIDS diagnosis, initiation of HAART during hospital admission, and hospital admission within six months prior to the initiation of HAART); and related to drugs (number of tablets/day, therapeutic scheme, ongoing use of other medication, and adverse drug reaction).

Initially, a descriptive analysis of the study population was performed, followed by a bivariate analysis to check the association between non-adherence and the other study variables using the chi-square test or Fisher's exact test. For the variables that were associated to non-adherence in the bivariate analysis, a multivariate analysis was performed, with estimation of the odds ratios (OR) and their respective 95% confidence intervals (95%CI), using logistic regression. The design of the final logistic model included variables that presented statistically significant or borderline differences to the descriptive level of  $p$ -value = 0.05, between those that adhere and did not adhere to HAART. The analyses were performed with the use of software Stata version 10 (Stata Corp., College Station, United States), licensed for the Institute of Public Health, Federal University of Bahia (ISC/UFBA).

The current investigation was approved by the Ethics Research Committee, ISC/UFBA, reg-

istered under the number 036-10, with approval given by opinion number 034, granted on July 29<sup>th</sup>, 2010.

## Results

The prevalence of non-adherence in the period of the study was 25%, with a tendency of growth over the follow-up months, despite a slight drop in the fourth month, as shown in Figure 1. Among the 216 patients, 65.2% were males, mean age  $37.8 \pm 9.5$  years, ranging from 1 and 70 years, and 62.5% were 34 years or older; 68% were single or lived alone, 65.3% informed having more than 8 years of school education, and 56.9% were employed or had a fixed income; 64% claimed to be heterosexual, 61.5% reported the intake of alcoholic beverage of some sort by the initiation of treatment, 75.1% reported not being a smoker by the initiation of treatment, and 93.7% denied having used illicit drugs.

The mean count of TCD4+ cells was  $191.9 \pm 163.7$  cells/mm<sup>3</sup>, ranging between 2 and 1,433 cells/mm<sup>3</sup>. More than half (64%) presented some type of symptom characteristic of AIDS and/or opportunistic diseases, and 50% initiated treatment with a TCD4+ lymphocyte count < 200 cells/mm<sup>3</sup>. The time elapsed between HIV diagnosis and AIDS notification ranged between 0 and 107.2 months, with median of 7.8 months. In terms of hospital admission, 5.2% of the patients initiated ARV therapy during hospital admission.

Considering the last six months before HAART initiation, 19.9% of the patients had to be admitted to the hospital for an AIDS-related reason, 31.6% had adverse reactions to antiretroviral drugs (ADR), 11.6% used drugs chronically to control another disease. For 87.9% of the patients, HAART was prescribed with four tablets a day, and 64.4% of the patients initiated HAART with two nucleoside analog reverse-transcriptase inhibitors (NRTI) associated to one non-nucleoside analogue reverse transcriptase inhibitor (NNRTI), and 35.6% initiated treatment with two nucleoside analog reverse-transcriptase inhibitors (NRTI) and one protease inhibitor. These schemes are in accordance with the guidelines for initial treatment established by the Ministry of Health and with the results found in the literature<sup>5,33</sup>.

The analysis of the data shows that in the group that did not adhere to HAART, 50% were younger people ( $p = 0.03$ ), and 46.3% had less than eight years of school education ( $p = 0.04$ ). Non-adherence was also higher among those who admittedly used illicit drugs (11.3%), but the statistic difference was borderline on the descriptive level ( $p = 0.05$ ), as shown in Table 1.

Table 2 shows that patients whose diagnosis of AIDS was made more than six months after being diagnosed with HIV infection had a higher prevalence of non-adherence ( $p = 0.001$ ) compared to those for whom the two diagnoses were made within six months.

Figura 1

Adherence to highly active antiretroviral therapy (HAART) over the first six months of treatment.

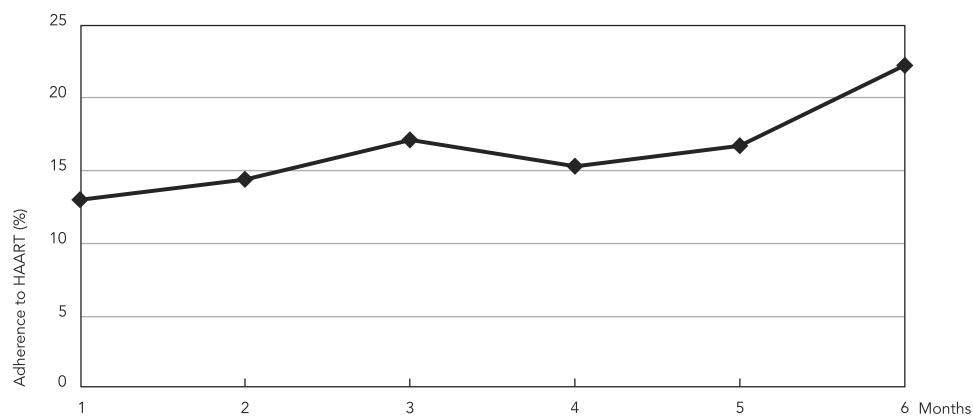


Table 1

Sociodemographic characteristics of the patients according with their adherence status.

Variable	Non-adherence		Adherence		p-value *
	n ** = 54	25%	n ** = 162	75%	
Sex					
Male	35	64.8	106	65.4	0.93
Female	19	35.2	56	34.6	
Age (years)					
< 34	27	50.0	54	33.3	0.03
≥ 34	27	50.0	108	66.7	
Years of school education					
≤ 8	25	46.3	50	30.9	0.04
> 8	29	53.7	112	69.1	
Occupation/Income status					
Employed/Fixed income	27	50.0	96	59.3	0.23
Unemployed	27	50.0	66	40.7	
Marital status					
Married	18	33.3	51	31.7	0.82
Single	36	66.7	110	68.3	
Sexual orientation					
Homo/Bisexual	16	32.6	56	37.1	0.57
Heterosexual	33	67.4	95	62.9	
Use of alcoholic beverages					
Yes	35	66.1	91	59.9	0.437
No	18	33.9	61	40.1	
Smoking					
Yes	17	32.7	34	22.2	0.13
No	35	67.3	119	77.8	
Use of illicit drugs					
Yes	6	11.3	7	4.6	0.08
No	47	88.7	146	95.4	

\* Chi-square test;

\*\* Differences between the overall total value and the total of each variable due to ignored information.

Considering the age, patients under 34 years had a likelihood 2.2 times higher of not-adhering to treatment than those aged 34 years or older ( $p = 0.039$ ). In terms of school education, patients who reported having less than eight years also had a likelihood 2.2 times higher not to adhere to HAART compared to those with eight or more years of school education ( $p = 0.037$ ) (Table 3).

The patients who presented any adverse reaction to ARVs had a probability 2.4 times higher not to adhere to treatment than those who did not have any adverse reaction at the beginning of the treatment ( $p = 0.024$ ). Those who reported using illicit drugs over their lives had a likelihood 2.6 times higher of not adhering to therapy than those who reported not using illicit drugs over their life, but this result was not statistically significant ( $p = 0.192$ ) (Table 3).

The time between diagnosis of HIV infection and diagnosis of AIDS was the variable most strongly associated to non-adherence. For patients who received both diagnosis in a time interval of more than six months had a chance four times higher of not adhering to HAART (aOR = 3.9 [ $p = 0.001$ ]).

Hospital admission shortly before initiation of treatment seems to have worked as a “protective factor” for adherence. Among the patients who were admitted to a hospital within six months prior to the initiation of therapy, the chance of adherence to treatment was 75% higher than those who were not admitted to a hospital, or their admission was more than six months from the initiation of HAART (aOR = 0.25 [ $p = 0.033$ ]).

Table 2

Clinical and drug-related characteristics of the study population according to their adherence status.

Variable	Non-adherence		Adherence		p-value *
	n ** = 54	25%	n ** = 162	75%	
T CD4+ lymphocyte count at HAART initiation (cells/mm <sup>3</sup> )					
< 350	50	92.6	153	94.4	0.42 ***
≥ 350	4	7.4	9	5.6	
Clinical status at HAART initiation					
Symptomatic	28	57.1	90	63.4	0.44
Asymptomatic	21	42.9	52	36.6	
Time elapsed between HIV diagnosis and AIDS (months)					
Until 6	11	20.4	78	48.1	0.001
More than 6	43	79.6	84	51.9	
Hospital admission for HAART initiation					
Yes	1	1.9	10	6.4	0.18 ***
No	53	98.1	147	93.6	
Hospital admission within 6 months prior to HAART initiation					
Yes	5	9.6	37	23.3	0.02 ***
No	47	90.4	122	76.7	
Adverse drug reaction					
Yes	24	47.1	43	26.7	0.01
No	27	52.9	118	73.3	
Chronic use of other drugs					
Yes	5	9.4	20	12.4	0.57 ***
No	48	90.6	142	87.6	
Number of HAART tablets					
Up to 4	44	81.5	146	90.1	0.09
More than 4	10	18.5	16	9.9	
Type of HAART scheme					
2 NRTI + 1 NNRTI	33	61.1	106	65.4	0.57
2 NRTI + 1 PI	21	38.9	56	34.6	

HAART: highly active antiretroviral therapy; NNRTI: non-nucleoside analogue reverse transcriptase inhibitors; NRTI: nucleoside analog reverse-transcriptase inhibitors; PI: protease inhibitor.

\* Chi-square test;

\*\* Differences between the overall total value and the total of each variable due to ignored information;

\*\*\* Fisher's exact test.

## Discussion

The prevalence of non-adherence, estimated at 25%, supports the results found in other studies carried out in Brazil <sup>19,23,28,34</sup>; however, high adherence levels are required for HAART to be successful <sup>3</sup>. It is to be mentioned that this investigation used, as a parameter to measure adherence, only the medication-collection pharmacy records, and that is a limitation of the study.

In a systematic review done by the research group of the ATAR Project, the mean prevalence

of non-adherence was 32.8% <sup>35</sup>. The low adherence found may contribute to explain an increase in the use of rescue therapy, due to the development of viral resistance to the initial therapeutic schemes, typically due to lack of adherence <sup>36,37,38</sup>.

Even though the follow up was of only six months, about 15% of the patients abandoned the treatment within this period. Despite this high HAART therapy withdrawal rate, no actions to address the problem were identified. To investigate the reasons why patients withdraw so early

Table 3

Odds ratio (OR) between non-adherence and the study variables with significant association.

Variable	aOR	95%CI
Age (years)		
< 34	2.20	1.04-4.49
≥ 34	1.00	
Years of school education		
≤ 8	2.20	1.05-4.80
> 8	1.00	
Use of illicit drugs		
Yes	2.60	0.63-10.41
No	1.00	
Time elapsed between HIV diagnosis and AIDS (months)		
Until 6	1.00	
More than 6	3.90	1.70-9.02
Hospital admission within six months prior to HAART initiation		
Yes	0.30	0.70-0.89
No	1.00	
Adverse drug reaction		
Yes	2.40	1.12-5.00
No	1.00	

95%CI: 95% confidence interval; aOR: adjusted odds ratio; HAART: highly active antiretroviral therapy.

from the treatment, and to develop strategies to reduce withdrawal rates may contribute to the quality of the services delivered to the patients by the health-care facility.

The occurrence of adverse reactions to ARVs was one of the most important predictors of non-adherence found in this study. The occurrence of therapy-related adverse reactions has been reported in a number of studies, and often accounts for early changes in the initial therapeutic scheme, and may even be related to withdrawal from treatment.<sup>28,33,34,36,39</sup>

The high rate of patients with signs of immunodeficiency or opportunistic infections (63.4%), and with TCD4+ lymphocyte count < 200 cells/mm<sup>3</sup> (50%) suggests late initiation of drug therapy, and reveals the existence of access barriers for a timely diagnosis and treatment of AIDS. The existing scenario contrasts with the one proposed by the Ministry of Health, of easy access to diagnosis, care and HIV/AIDS treatment, and this deserves to be further investigated. Patients with TCD4+ cell count < 200 cells/mm<sup>3</sup> and asymptomatic tend not to adhere to HAART<sup>16,35,40,41</sup>.

Effort should be placed in the identification of obstacles that delay patients in accessing health-care services.

Among the patients assessed, the rate of unemployment or lack of fixed income was high

(43%) and the level of school education was low, since 35% had less than 8 years of formal education. These data may indicate low socio-economic level, which was also found in other studies<sup>11,19,29</sup>. The social status may help explain the difficulties patients have to understand the importance of adherence. Social and economic factors, such as lack of resources and difficulties in commuting also limit access to health facilities, hampering the provision of health care and contributing to non-adherence<sup>40</sup>.

The association between adherence and alcohol intake was not statistically significant, but this result differs from the results of other investigators<sup>11,28,29</sup>, and a number of patients have reported not using the medication over the weekend so they can have alcoholic beverages, and this finding reveals a limitation of the methodology used in this study.

In different studies, the use of illicit drugs and the number of HAART tablets were variables statistically associated to non-adherence<sup>12,28,29,34,36,42</sup>. As mentioned by Sousa Filho et al.<sup>40</sup>, the use of illicit drugs has a negative influence on the decision by the individual about the treatment, and compromises adherence. Despite the results seen elsewhere, this association was not statistically significant in this investigation.

The variable most consistently associated to non-adherence was the time elapsed between infection by the virus and the diagnosis of the disease. Understanding the need of treatment, the consequences of non-adherence, the importance of medical follow-up and lab tests, among others, are factors that should be broadly discussed with HIV-infected patients, to prepare them to initiate treatment and to promote adherence to HAART.

Timely access to the health-care facility, the relationship with the medical team, understanding the need of the treatment, and the proper follow-up of the patient are essential elements to promote adherence, particularly in the first few months after initiation of treatment, when adverse drug reactions may occur, or mistakes are made in the use of ARV agents, or the patient forgets to take the medication, among other factors that negatively influence adherence<sup>17,18,29,35</sup>.

The pharmacy is a strategic place to investigate non-adherence, as from the medication collection records it is possible to identify patients that collect their medication irregularly, or who have complaints about the drugs, and plan adherence-promotion actions and early identification of patients with a potential risk of non-adherence.

## Conclusion

The main non-adherence predictors found in this study were the time elapsed between HIV diagnosis and manifestation of AIDS, the occurrence of adverse reactions to medication, age, years of school education schooling, and the use of illicit drugs. A “protective factor” for adherence was hospital admission prior to HAART initiation.

To ensure the initial therapeutic scheme favors adherence, other studies should be conducted to investigate the reasons why more than 15% of the patients changed their first ARV therapeutic scheme within the first six months after initiation of treatment, and to develop mechanisms that foster the maintenance of the original scheme.

Another limitation of this study is the fact that it has an exploratory nature; thus, it makes only an assessment of the situation, discloses possible disruptions in the work of the health-care facility, indicates gaps in the service structure or organization, and points to possible solutions or pathways to improve the existing reality.

Promoting periodic meetings with the entire care-delivery team, discussing the main problems faced by the patients and by the team in order to improve adherence to treatment, setting up spaces and encouraging the formation of patient groups to exchange experiences are measures that are simple to plan and carry out, and may favor the change of the current scenario and improve the indicators presented in this study.



## Resumen

*El objetivo de este estudio fue investigar factores asociados a la no adherencia a terapia antirretroviral altamente potente (TARV) en los primeros seis meses de tratamiento. Estudio transversal en individuos con SIDA de Salvador, Bahia, Brasil, de edad  $\geq 13$  años, cuya primera prescripción a antirretroviral (ARV) fue en 2009. Se utilizaron historias clínicas y registros de farmacia. De 216 pacientes, 65,3% fueron hombres de  $37,8 \pm 9,5$  años en promedio. La mayoría informó ser soltero 67,9%, heterosexual 64%, 8 años de estudio o más 65,3%, consumir alcohol 61,5%, y negó tabaquismo 75,1% y uso de drogas ilícitas 93,7%. El 94% inició TARV con TCD4+  $< 350$  células/mm<sup>3</sup>; 61,8% estaba sintomático, 68,4% presentó reacciones adversas a ARV. La prevalencia de no adherencia fue 25%. Variables asociadas fueron: mayor tiempo entre infección por HIV y SIDA (aOR = 3,9), reacción adversa al medicamento (aOR = 2,4), edad menor a 34 años (aOR = 2,2), escolaridad menor a 8 años (aOR = 2,2) y uso de drogas ilícitas (aOR = 2,6). La alta tasa de no adherencia es un problema importante en los primeros seis meses de tratamiento antirretroviral.*

*Cumplimiento de la Medicación; Antirretrovirales; Síndrome de Inmunodeficiencia Adquirida*

## Contributors

J. A. G. Silva participated in the conception, design, data analysis, critical review, preparation of the final version, and has a co-responsibility agreement for the paper. I. Dourado collaborated in the design, data analysis, critical review, preparation of the final version and has a co-responsibility agreement for the paper. A. M. Brito contributed in the design, critical review, preparation of the final version, and has a co-responsibility agreement for the paper. C. A. L. Silva collaborated in the critical review, preparation of the final version, and has a co-responsibility agreement for the paper.

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