

# Profile of People Living with HIV/AIDS in a Large Municipality of São Paulo State, Brazil (2012-2013)

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**Abstract:** HIV/AIDS has brought to light the challenge of incorporating the many influences between living conditions, social characteristics and health services performance to an adequate care for PLWHA (people living with AIDS). Vulnerability of these populations is under the responsibility of specialized care units whose assistance does not always occur according to their real needs and demands. Therefore, this study aimed to analyze demographic, social and clinical profiles of PLWHA, as well as their follow-up in SS (Specialized Health Services) in Ribeirão Preto, Brazil. It is a descriptive study conducted by the application of structured questionnaires to 253 patients with HIV/AIDS in follow-up during the years of 2012-2013. Variables were analyzed by descriptive statistics procedures. The findings pointed out gender parity, aging population, low education and economic predominance of class C. Regarding clinical characteristics, there was a predominance of asymptomatic individuals, with no clinical manifestations of AIDS or major comorbidities. The main mode of transmission was through sexual contact. The results led to the need of adequating the assistance provided to the specificities inherent to PLWHA. The care provision should cross an interdisciplinary perspective, targeting recognition of problems and ensuring comprehensive health care adequate to users' needs and demands.

**Key words:** AIDS, user profile, evaluation of health services, comprehensive health care.

## 1. Introduction

The infection with HIV (human immunodeficiency virus) is associated with a spectrum of clinical manifestations, which may be asymptomatic until the advanced stage of this clinical disorder. The care for (people living with HIV/AIDS) requires organization and integration between different health facilities that compose a health service system. This care should be able to recognize the unique needs and specific demographic, clinical and social characteristics of these subjects—a complex task to health professionals.

According to epidemiological data of 2012, there are approximately 34.2 million people living with HIV in

the world, with 2.5 million new cases of infection and 1.7 million deaths due to the disease. In Latin America, in 2011, an average of 1.4 million people, including adults and children, were identified with HIV infection, and of these, approximately 86,000 had been infected recently. There were approximately 57,000 deaths due to this disease in the same year [1]. In Brazil, from 1980 to June 2012, a total of 656,701 HIV patients were registered. It is noteworthy that the city of Ribeirão Preto occupies the 7th place in relation to incidence rate in São Paulo state [2], with 8,720 cases recorded between 1980 and 2012. Regarding the mortality rate in 2010, the city occupied the 24th place in the state with the coefficient of 11.4 cases per 100,000 inhabitants [3].

It is known that the dynamics of chronic diseases such HIV/AIDS transcends the biological model, once it presupposes interdisciplinary practices to uncover

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social vulnerability, demanding a better planning and reorganization of health technologies [4]. Challenges remain for the effective prevention and management of the disease, including the design of sustainable public policies, strengthening of health systems and the development of intervention strategies appropriate to the various social and health settings.

Thereby, it is essential for the organization of the health care network to promote timely access and respond the needs and demands of this population. Health professionals should incorporate into their work process the concern with the identification of groups in vulnerable situations and provide comprehensive and resolute care [5].

The present study aimed to identify the social, demographic, clinical profile and follow-up informations of PLWHA assisted by SS (Specialized Health Services) in Ribeirão Preto—São Paulo, Brazil. The knowledge of these unique characteristics of patients and the identification of follow-up informations may support the development of comprehensive strategies to the provision of care and social support to address vulnerability and strengthen the management of chronic conditions such as HIV/AIDS in health care settings.

## 2. Methods

The study was developed in the city of Ribeirão Preto, whose estimated population was of 614,759 inhabitants in 2011 [2]. In the same year, the incidence rate of AIDS was 22.4 per 100,000 inhabitants—higher than the State of São Paulo as a whole in the same year (18.5 per 100,000). The local health system is organized in five health districts and care to PLWHA is conducted in ambulatories and hospitals.

There is one ambulatory of reference in each of the five health districts with a health team responsible to provide services such as HC (Home Care) and CT (Counseling and Testing services). It is noteworthy that all public health are able to request HIV testing

and if a positive diagnosis is identified, the patient is referred to the SS of his/her choice, even if he/she does not belong to the coverage area of the aforementioned unit.

The patients with AIDS who presented any clinical complication were hospitalized in the Infectious Diseases Unit of a university hospital.

The study population consisted of PLWHA in follow-up by SS in the city. The authors considered as inclusion criteria: confirmed cases of AIDS, aged over 18 years, resident in the city of Ribeirão Preto and outside prison system.

It is noteworthy that the definition of AIDS case by the Brazilian Ministry of Health was used in the manuscript: “advanced HIV infection with immune system effects, with or without the occurrence of signs and symptoms caused by HIV itself or related opportunistic diseases (infections and neoplasms)” [6].

The sample size was calculated upon the total number of confirmed cases in follow-up by the SS in December 2010 (total of 1120 cases): 200 in the central SS, 200 in the northern SS, 300 in the western SS, 300 in the southern SS, and 120 in the eastern SS. The letters (“A”, “B”, “C”, “D” and “E”) were used to designate each one of the SS, in order to preserve their identity.

Thus, the minimum number of patients was determined by the expression  $n^* = (pxq)/V$  ( $P$ ) resulting in 286. For sample size parameters, a  $\alpha$ -value of 0.05 and the prevalence was assumed as 0.50 were assumed by the authors. Considering a potential loss of 5%, it was determined that  $(286.05/0.95) = 303$  individuals were interviewed.

The sampling process was conducted in two stages: proportional stratification according to health service and convenience sampling to complete the calculated sample size. Thus, the number of subjects interviewed for each health service was: 54 individuals in the northern district; 33 in the eastern district; 100 in the western district, 81 in the southern district and 54 in the central district, resulting in a total number of 303

study subjects. Among those, 50 individuals refused to participate in the study arguing lack of time. The final sample was composed by 253 patients.

A structured questionnaire based on the Ministry of Health Guidelines regarding HAART in HIV-infected adults [7], the Clinical guidelines for patients with HIV/AIDS of the Foundation Hospital of Minas Gerais [8], the Primary Care Assessment Tool [9] and the Protocol for evaluation of the AIDS care quality in Brazil [10] were applied to conduct the interviews. The data collection instrument consisted of 82 questions divided into four sections: I—Social-demographic data, II—Follow-up data; III—Range of services (health services available and case management) data; IV—Coordination data (integration among different health services), according to Starfield [11].

For the study, the following variables were analyzed: gender, age, ethnicity, marital status, schooling, employment status, economic status (according to the Brazilian Association for Research—ABEP), residence, government benefits (from section I); probable HIV transmission mode, diagnosis; clinical manifestations at diagnosis and at the moment of the interview, opportunistic infections at diagnosis and at the moment of the interview, latent TB infection, specific treatment apart from antiretrovirals, health services utilization, TB signs and symptoms.

Interviews were conducted from January 2012 to May 2013, in the local health services after patients' signature of the consent form. Data analysis was performed using Statistica software, version 9.0 from Statsoft by calculating frequencies and measures of central tendency and variability.

The study was approved by the Ethics Committee of the Ribeirão Preto School of Nursing—University of São Paulo (process 1215/2010).

### 3. Results

Among 253 PLWHA interviewed, majority were

female (51.4%), white (52.6%), married (37.2%) or single (36.4%). The proportion of infection among female/male was one woman per 1.06 men (1:1.06). The age range of 30-49 years was the most affected, followed by the age group 50-69 years. Low education was evident in the study population and the majority was illiterate or had incomplete primary education (47.8%). Most patients were employed (39.5%) followed by retired (19.4%) and self-employed (12.6%), with own residence (50.2%) or living by rent (33.3%). Regarding the economic classification, class C (C1 + C2) prevailed (52.9%), followed by D (20.1%). Regarding government benefits, the majority did not receive any type of aid (Table 1).

The main mode of HIV transmission was sexual transmission (76.3%). Among the respondents, 18.1% reported not knowing the probable mode they get infected. The main reason that led individuals to search for the diagnosis was the appearance of signs and symptoms (30.4%), followed by the diagnosis of the partner (22.5%). With respect to health services used by PLWHA, most reported exclusive use of the public health system (90.5%). The direct payment for private services and adherence to health insurance plans (9.5%) were identified (Table 2).

Most of respondents did not reported opportunistic diseases (74.7%) or clinical manifestations (74.0%) at the moment of the diagnosis. Among those who had clinical manifestations at diagnosis, weight loss was the most frequent (8.3%). At the time of the interview, the majority showed no opportunistic diseases (92.4%) and/or clinical manifestations (90.1%).

Regarding to tuberculosis information, the majority refers no TB signs or symptom, such as coughing, fever, loss of appetite, weight loss, night sweats and weakness. Among the 253 respondents, 40 individuals reported having being diagnosed for prior latent TB infection (15.8%). Of these, 36 people were treated (90.0%). Regarding directly observed therapy for latent TB infection treatment, 23 (63.9%) interviewees reported not been on DOT.

**Table 1** Frequency distribution of social-demographic variables of people living with AIDS, Ribeirão Preto—SP, 2012-2013.

Demographic and social characteristics		Interviewees (N = 253)	
		n	%
Sex	Female	130	51.4
	Male	122	48.2
	Unheeded	1	0.4
Age	18-29 years	19	7.5
	30-49 years	152	60.1
	50-69 years	78	30.8
	More than 70 years	4	1.6
Ethnicity	White	133	52.6
	Mixed	47	18.6
	African	72	28.5
	Indigenous	1	0.4
	Asian	0	0.0
Marital Status	Married	94	37.2
	Single	92	36.4
	Divorced	37	14.6
	Widow	29	11.5
	Other	1	0.4
Schooling	Illiterate or with less than 8 years of study	121	47.8
	8 years of study	35	13.8
	11 years of study	67	26.5
	15 years of study or more	6	2.4
Job status	Employed	100	39.5
	Self-employes	32	12.6
	Retired	49	19.4
	Unemployed	42	16.6
	Housewife	16	6.3
	Afastado	14	5.5
	Student	0	0.0
Economic classification	A1	0	0.0
	A2	2	0.8
	B1	15	6.0
	B2	48	19.0
	C1	80	31.6
	C2	54	21.3
	D	51	20.1
E	3	1.2	
Residence	Own residence	141	55.7
	Rent	101	40.0
	Other	11	4.3
Government benefits	Did not received	182	72.0
	Bolsa Família*	20	7.9
	Auxilio Doença**	20	7.9
	LOAS***	8	3.1
	Others	23	9.1

\*: The program “Bolsa Família” is a social program of the Brazilian government that offers a straight transfer of income that benefits families in situation of poverty and extreme poverty in the whole country.

\*\* : The “Auxilio Doença” is a benefit granted by the Brazilian government to a worker who is removed of the work for the period of 15 consecutive days or more as a result of incompetence by some illness.

\*\*\*: Organic law of the National Social Assistance implemented by the Brazilian government to protect the citizens who were even abandoned in social sense, stricken by crippling diseases or elderly people and physical deficient through a financial allowance.

**Table 2** Frequency distribution of follow-up variables in Ribeirão Preto—SP, 2012-2013.

Follow-up information		Interviewees (N = 253)	
		n	%
HIV probable mode of transmission	Sexual	193	76.3
	Unknown	46	18.1
	Intravenous drugs	10	4.0
	Blood transfusion for hemophilia treatment	1	0.4
	Blood transfusion	2	0.8
	Vertical transmission	1	0.4
	Biological material work accident (seroconversion after 6 months)	0	0.0
Main reason of diagnosis	Sign and symptoms	77	30.4
	Partner diagnosed	57	22.5
	By chance	33	13.0
	Curiosity	24	9.5
	Pregnancy	21	8.3
	Labor (delivery)	5	2.0
	Blood transfusion	13	5.1
Health services utilization	Others	23	9.1
	Public Health System	229	90.5
	Public and private health services	24	9.5
Other treatments beyond ART	Yes	87	34.4
	No	166	65.6

**Table 3** Frequency distribution of clinical variables of people living with AIDS in Ribeirão Preto—SP, 2012-2013.

Clinical profile		Interviewees (N = 253)	
		n	%
Opportunistic diseases at the time of the diagnosis	None	189	74.7
	Herpes Zoster	18	7.2
	Citomegalovirus	1	0.4
	Pneumonia	14	5.5
	Criptococosis	0	0.0
	Toxoplasmosis	3	1.2
	Other	28	11.0
Clinical manifestations at the time of the diagnostic	None	187	74.0
	Fever $\geq 38^\circ\text{C}$ for at least $\geq 1$ month	17	6.7
	Diarrhea $\geq 1$ month	12	4.7
	Weight loss $> 10\%$	21	8.3
	Persistent dermatitis	4	1.6
	Lipodistropia	0	0.0
	Other	12	4.7
Opportunistic diseases at the time of the interview	None	234	92.4
	Herpes Zoster	5	2.0
	Citomegalovirus	0	0.0
	Pneumonia	1	0.4
	Criptococosis	0	0.0
	Toxoplasmosis	3	1.2
	Other	10	4.0
Clinical manifestations at the time of the interview	None	228	90.1
	Fever $\geq 38^\circ\text{C}$ for at least $\geq 1$ month	2	0.8
	Diarrhea $\geq 1$ month	2	0.8
	Weight loss $> 10\%$	3	1.2
	Persistent dermatitis	4	1.6
	Lipodistropia	0	0.0
	Other	14	5.5

#### 4. Discussion

The sociodemographic profile identified in this study confirmed literature findings that show parity of infection between sexes, an aging population, stable marital status, low education, access to some form of income and economic predominance of class C [12-16]. The sociodemographic profile of PLWHA changed to affect more heterosexuals, women, and poor people [17]. The increased number of cases among women is mainly present among those reporting having a stable relationship, which often places woman in a position of subordination to the partner [18]. A woman becomes more vulnerable to disease as a result of their position in society, which often prevents her to negotiate condom use, seem as an insult to fidelity [19].

The prevalence of individuals aged 30 years to 49 years shows the impact in the economically active population and the prevalence of the age group 50-69 years reflects the appearance of this disease in a population undergoing aging process. This finding can be interpreted by the fact that these users have not received guidance on prevention of the disease when they were younger, as well as the introduction of antiretroviral therapy, which increased the survival of the population affected by the disease [20].

The infection among groups with a lower level of education and low socioeconomic status can associate the profile of the epidemic to social inequality. The vulnerability of PLWHA is associated with many social problems [21]. Other studies indicate that the relationship between AIDS and poverty is complex and, in certain contexts, populations with higher socioeconomic status have a higher prevalence of HIV, so the “impoverishment” is not related to classic indicators of poverty, but to social inequity and poverty characteristic of large urban centers [22].

The findings regarding HIV transmission corroborates the findings of another study conducted by Silva et al. [23], who observed that the main mode of transmission was still through sex, which was

strongly associated with the increase in cases among married women.

In 1996 the Brazilian government provides universal free ART for PLHA, contributing to a change in the clinical profile of the disease by causing a reduction in the number of death, less hospitalizations and increased survival [24]. When exploring the data from this study, it is clear that the majority of respondents reported not having opportunistic diseases or clinical manifestations at the time of interview. Most of the subjects did not have TB infection, considered as the major comorbidity among PLWHA. Even with the small number of interviewees who have been affected by TB a redesign of the care provided to these clients is necessary to prevent TB disease among PLWHA.

Currently, TB/HIV care should integrate TB control during the treatment of HIV-infected patients. To achieve this, it is necessary to know both clinical course of AIDS and TB and the socioeconomic and cultural aspects that interfere in both diseases, to help the foundations on the development of policies and strategies for health actions in this context cases. These elements reinforce the importance of coordinated actions from HIV/AIDS and TB control programmers [25].

The assistance to HIV/AIDS, as well as in other areas of health care, occur within a process where relationship between patient-provider facilitates bond. Given the diversity of the population living with AIDS, in order to guarantee an adequate management of the disease needs to be based in this sense, the authors propose a carefully following of patient-centered care that values different subjects working for health promotion, including users, managers and workers. By doing this, the establishment of acceptance and inclusion of these users could promote the optimization of services, prioritization of risks and access to other levels of the health system [7].

The case management based on a risk hierarchy fits the principle of equity, which is understood as a tool for overcome inequalities, implying that the

differentiated needs of the population are met through the provision of individual actions [26]. The authors emphasize the importance of evaluating different vulnerability profiles and, consequently, the recognition of unequal access by those patients to technological resources of disease prevention and follow-up [27].

The literature places sociocultural differences as the main challenge to the care of PLWHA [28-30]. Every human being has a unique history of life that is directly related to his/her concept of health and disease process. Health professionals need to be aware of this and their work should transcend the institutional walls of healthcare, seeking to involve lifestyle, concepts and beliefs in order to offer resolute and comprehensive care.

However, health system is more and more pursuing and appreciating specializations instead of a broader comprehensive practice. Practitioners today are increasingly focused and prepared to work only in their specific areas [11], but for HIV/AIDS, as a chronic condition, assistance goes beyond clinical or biological aspects. By incorporating ART, individuals affected by the disease earned year survival [24] and demands quality of life, bringing to the medical appointments their frustrations, desires, questions and emotions caused by the stigma still suffered. From this point of view, patients are the protagonists of their lives and a patient-care approach is recommended to achieve favorable health outcomes [31].

Different health professionals need to aggregate and articulate new knowledge for the development of activities in the PLWHA care [32]. Given the complexity of health care for PLWHA, as evidenced by the components that characterize this population profile, there is no doubt about the importance of an interdisciplinary and intersectoral integration of health services to address their bio-psycho and social demands.

## 5. Conclusions

This study allowed to bring evidences around the

profile of PLWHA assisted in SS in the city of Ribeirão Preto—São Paulo, Brazil. The authors identified gender parity, aging population, low education and economic predominance of class C. Regarding clinical characteristics, the findings point out the predominance of asymptomatic individuals with regard to clinical manifestations and existence of major comorbidities. The main mode of transmission was through sexual contact. Such characteristics conclude to reflection on the complexity of care for such individuals. The provision of care should cross an interdisciplinary perspective, targeting recognition of problems and ensuring comprehensive health care adequate to users' needs and demands.

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