

# WOMEN LIVING WITH HIV/AIDS

## Sleep impairment, anxiety and depression symptoms

Priscila Junqueira<sup>1</sup>, Silvia Bellucci<sup>2</sup>, Sueli Rossini<sup>3</sup>, Rubens Reimão<sup>4</sup>

**Abstract – Objective:** To evaluate sleep impairment, symptoms of anxiety and depression, and associations with sleep characteristics of sleep in female HIV/AIDS patients. **Method:** 30 female patients with HIV/AIDS were evaluated along with 30 female controls with a mean age of 35.4 years in the study group and 33.1 years in the control group, with: a) the Pittsburgh Sleep Quality Index; b) the Beck Anxiety Inventory; c) the Beck Depression Inventory. **Results:** Sleep quality was more impaired in AIDS patients than in those with HIV+ or in controls. The AIDS patients showed more symptoms of anxiety. There were associations of sleep impairment with anxiety in HIV+ patients; whereas in AIDS patients associations were found between sleep impairment and depression. **Conclusion:** There was sleep quality in the presence of symptoms of anxiety and depression. In HIV+ patients, sleep impairment was associated with anxiety, while in AIDS patients sleep impairment was associated with depression.

**KEY WORDS:** sleep, sleep disorders, sleep quality, HIV positive, AIDS, anxiety, depression.

### Mulheres portadoras de HIV/AIDS: características do sono, sintomas de ansiedade e depressão

**Resumo – Objetivo:** Avaliar o sono, verificar sintomas de ansiedade e depressão e associações com as características do sono de mulheres portadoras de HIV/AIDS. **Método:** Foram avaliadas 30 mulheres portadoras de HIV/AIDS e 30 controles com média de idade para o grupo estudo de 33,1 anos ( $p=0,320$ ), utilizando-se os seguintes instrumentos: a) Índice de Qualidade do Sono de Pittsburgh; b) Inventário de Ansiedade Beck; c) Inventário de Depressão Beck. **Resultados:** Verificou-se que a qualidade do sono estava mais prejudicada nas doentes de AIDS em comparação com as soropositivas e o grupo controle. As doentes de AIDS apresentaram mais sintomas de ansiedade. Ocorreram associações do comprometimento do sono com sintomas de ansiedade nas mulheres soropositivas; e nas doentes de AIDS associações foram verificadas do sono e sintomas de depressão. **Conclusão:** Houve prejuízo na qualidade do sono, associada a presença de sintomas de ansiedade e depressão. Nas mulheres soropositivas o comprometimento do sono associou-se com a ansiedade e nas doentes de AIDS sono associou-se com a depressão.

**PALAVRAS-CHAVE:** sono, distúrbios do sono, qualidade do sono, HIV positivo, AIDS, ansiedade, depressão.

Between 1980 and June 2007, 474,273 cases of acquired immunodeficiency syndrome (AIDS) were diagnosed in Brazil, 159,793 being in females<sup>1</sup>. Currently, AIDS is the leading cause of death among women aged 15 and 49 years in the major Brazilian cities<sup>2</sup>.

It has been shown in research conducted to determine the relationship between the spread of the human immunodeficiency virus (HIV) and sleep disorders, that such disturbances are symptoms often reported at the beginning of the infection by HIV and which continue throughout its changes to AIDS<sup>3</sup>. Symptoms of anxiety in HIV infected pa-

tients are related to the uncertainties about the evolution of the disease, its clinical course, fears related to pains, suffering, body decay, treatment and death<sup>4</sup>. Even though the scientific literature focuses on the importance of sleep quality, symptoms of anxiety and depression as distinct pictures, we have failed to find studies addressing the inter-relationship of these factors in female HIV/AIDS patients.

Therefore our objective of this study was to evaluate the sleep impairment, to investigate symptoms of anxiety and depression, and to associate them with the characteristic sleep in women infected with HIV/AIDS.

Hospital das Clínicas, University of São Paulo Medical School, São Paulo SP, Brazil: <sup>1</sup>Psychologist, Sleep Medicine Advanced Research Group, Division of Clinical Neurology; <sup>2</sup>Immunologist, Director, Center of Control and Immunological Investigation "Dr. A.C. Corsini", Campinas SP, Brazil; <sup>3</sup>Psychologist, PhD, Sleep Medicine Advanced Research Group, Division of Clinical Neurology; <sup>4</sup>Neurologist, MD, PhD, Sleep Medicine Advanced Research Group, Division of Clinical Neurology. Grant: CAPES.

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Dr. Rubens Reimão – Rua dos Bogarís 38 - 04047-020 São Paulo SP - Brasil. E-mail: reimaorubensneuro@yahoo.com

**METHOD**

The research involving the study group was conducted at the Center of Control and Immunological Investigation “Dr. A.C. Corsini”, located in the city of Campinas – SP, and, and a control group at the Health Center “31 de Março”, located in the same city.

Nineteen women with HIV and 11 with AIDS aged from 25 to 51 years comprised the study group. The control group consisted of 30 control individuals, aged between 19 and 58 years. The AIDS/HIV and control groups had mean ages of 35.4 and 33.1 years, respectively (p=0.320). Therefore, a total of 60 individuals took part of the study.

The inclusion criteria adopted to selected the study group were: a) age between 18-60 years; b) known positive diagnoses for HIV/AIDS; c) agreement with and signing of the informed consent. Inclusion criteria for the control group were: a) age between 18-60 years; b) no known HIV/AIDS diagnoses; c) agreement with and signing of the informed consent.

The instruments applied were: a) the Pittsburgh Sleep Quality Index (PSQI); b) the Beck Anxiety Inventory (BAI); c) the Beck Depression Inventory (BDI).

Fisher’s exact test was employed to address the aims of the study. In addition to verifying the existence of association and categorized measurements, the Chi-Square test for homogeneity was also applied to find correlates within the group, where the categorized variables included: schooling, marital status, income/worker’s salary and occupation. Also, Spearman’s rank correlation test was used to establish the relationship among the scales of sleep quality, anxiety and depression.

This research was approved by the Ethics Committee of the institution, Hospital das Clínicas da FMUSP, under research pro-

ocol number 156/04. All patients and controls signed the Informed Consent Term at the beginning of the evaluation.

**RESULTS**

The AIDS patient’s age ranged between 24 and 51 years, the HIV patients between 19 and 51 years and the control group, between 19 and 56 years, with a mean age of 35.4 years and 33.1 years for each group respectively (p=0.0320).

Table 1 shows that, with regards to marital status, 36.8% of the female HIV-positive were single/divorced, 42.1% were married, or had a partner, and 21.1% were widows. A total of 45.5% of the female AIDS patients were single/divorced, 36.4% were married, or had a partner, and 18.2% were widows. In the control group, 53.3% of the women were single/divorced, 40% were married, or had a partner, and 6.7% were widows.

There was a significant difference (p<0.001) for group occupation, where the AIDS patient group contained more inactive workers.

Concerning schooling, in the group of female HIV-positives, 26.3% had not concluded their primary studies, 26.3% had concluded their primary studies, 15.8% had not concluded high school, 21.1% had concluded high school and 10.5% had a university degree. Among the AIDS patient group, 27.3% had not finished their primary studies, 9.1% had concluded their primary studies, 18.2% had not finished high school, 36.4% had finished high school, and 9.1% had a university degree. In the control group, 10% of the participants had not completed their primary studies, 6.6% completed their primary studies, 6.6% had not

Table 1. Sociodemographic characteristics and association tests results.

Variable	Category	Group						Total		p
		HIV+		AIDS		Control		n	%	
Schooling	Incomplete primary	5	26.3	3	27.3	3	10	11	18.3	0.124
	Completed primary	5	26.3	1	9.1	2	6.7	8	13.3	
	Incomplete high school	3	15.8	2	18.2	2	6.7	7	11.7	
	Completed high school	4	21.1	4	36.4	20	66.7	28	46.7	
	College degree	2	10.5	1	9.1	3	10	6	10	
Income/ worker’s salary	2	12	63.2	9	81.8	26	86.7	47	78.3	0.143
	4	7	36.8	2	18.2	4	13.3	13	21.7	
Marital status	Single/divorced	7	36.8	5	45.5	16	53.3	28	46.7	0.595
	Married/unmarried partner	8	42.1	4	36.4	12	40	24	40	
	Widower	4	21.1	2	18.2	2	6.7	8	13.3	
Occupation	Active	13	68.4	0	0	22	73.3	35	58.3	<0.001
	Inactive	6	31.5	11	100	8	26.7	25	41.6	
<b>Total</b>		19	100	11	100	30	100	60	100	

p=result of the chi-square test.

Table 2. Sleep pattern, anxiety and depression levels.

Variable	Category	Group								p
		HIV+		AIDS		Control		Total		
		n	%	n	%	n	%	n	%	
Efficiency	>85%	7	36.8	7	63.6	26	86.7	40	66.7	0.002*
	75% a 84%	6	31.6	0	0.0	1	3.3	7	11.7	
	65% a 74%	3	15.8	1	9.1	3	10.0	7	11.7	
	<65%	3	15.8	3	27.3	0	0.0	6	10.0	
Sleep disturbances	Never	0	0.0	1	9.1	1	3.3	2	3.3	0.017*
	Less than once a week	8	42.1	0	0.0	16	53.3	24	40.0	
	Once or twice a week	9	47.4	7	63.6	13	43.3	29	48.3	
Use of sleeping medication	3 times a week	2	10.5	3	27.3	0	0.0	5	8.3	0.017*
	Never	11	57.9	6	54.5	28	93.3	45	75.0	
	Less than once a week	2	10.5	0	0.0	1	3.3	3	5.0	
	Once or twice a week	1	5.3	0	0.0	0	0.0	1	1.7	
Sleep quality	3 times a week	5	26.3	5	45.5	1	3.3	11	18.3	0.003*
	Good	2	10.5	2	18.2	13	43.3	17	28.3	
	Bad	17	89.5	9	81.8	17	56.7	43	71.7	
Anxiety	Minimal	7	36.8	2	18.2	16	53.3	25	41.7	0.013**
	Slight	3	15.8	2	18.2	6	20.0	11	18.3	
	Moderate	5	26.3	5	45.5	5	16.7	15	25.0	
	Severe	4	21.1	2	18.2	3	10.0	9	15.0	
Depression	Minimal	7	36.8	2	18.2	17	56.7	26	43.3	0.029**
	Slight	5	26.3	4	36.4	7	23.3	16	26.7	
	Moderate	5	26.3	4	36.4	6	20.0	15	25.0	
	Severe	2	10.5	1	9.1	0	0.0	3	5.0	

\*Result of the chi-square test; \*\*result of Spearman's rank correlation test.

concluded high school, 66.7% had completed high school and 10% had a university degree.

The income estimate was based upon the number of minimum salaries that the participants received. In the study group, 21 woman (70%) received 2 minimum salaries whereas 26 women (86.7%) received 2 minimum salaries in the control group

Therefore, groups showed similar socio-demographic profiles with the only significant difference being occupational status.

Table 2 shows that the AIDS patient group had greater compromise in measures of efficiency, sleep impairment, and use of medication of sleep ( $p=0.002$ ,  $p=0.017$ , and  $p=0.017$ , respectively). Moreover, the AIDS patients had worse quality of sleep ( $p=0.003$ ).

The PSQI was strongly related to the anxiety level ( $p<0.05$ ) of women with HIV. The higher the anxiety score, the higher the sleep score. The PSQI was directly correlated with the level of depression ( $p<0.05$ ) in the group of AIDS patients. The higher the depression score, the higher the sleep score. The control group showed strong correlation between quality of sleep score and level of anxiety and depression, i.e., the higher the outcomes of the levels of anxiety and depression.

## DISCUSSION

In Brazil, the number of AIDS cases among women has also been one of the marked characteristics of the epidemic. In Europe, the age among adult female patients ranged between 18 and 47 years of age, the mean being 19.7 years<sup>5,6</sup>. In the present study, the results of age range mirrored those of other studies<sup>7</sup>. The likely reasons underlying this increased age range have been attributed to several factors: safe sex, more efficient antiretroviral drugs, rise in life expectancy, and longer sexually active life. Another relevant aspect characterized women with HIV/AIDS in their marital status. Researchers described and correlated the variables anxiety and depression in women with HIV/AIDS<sup>8</sup> and demonstrated that 42.5% of their sample were married women where the data in the present study corroborates the scientific literature. Schooling differentiated individuals regarding their access to information, and has major importance in health conditions. This study supports the results of an earlier study<sup>4</sup>. Occupational status is another measure of socio-demographic status linked to health, playing an important role in defining the study group. Therefore the results of this research are consistent with those of earlier studies<sup>2,8</sup>, where most women in the study group were inactive. This

measure was evidence of the impoverishment and cultural marginalization of women with HIV/AIDS. Living with HIV implies facing discrimination, breakdown of affective relationships, and sexual problems. Under such circumstances, living and coping with the disease become increasing challenging and as a consequence quality of sleep can suffer. Notably, the study group presented an average of 10.1 in the global scores on the PSQI, similar to data of another study<sup>9</sup>. The study group of patients with AIDS showed greater compromise in efficiency, sleep disorders and use of prescribed hypnotics than did the control group. These data are consistent with other work<sup>10</sup> which sought to correlate sleep with other physical and psychological characteristics of HIV+ patients, revealing that 53.8% of AIDS patients had sleep disorders.

In conclusion, this research has allowed us to conclude that the AIDS patients showed greater sleep impairment in the pattern of sleep than did HIV+ patients, and a control group. The group of AIDS patients showed more intense signs and symptoms of anxiety than did the HIV+ subjects, and the control group. There was no evidence of significant differences in intensity of signs and symptoms of depression among the groups. There was a significant correlation between signs and symptoms of anxiety and sleep in the HIV+ group. In the group of AIDS patients,

there was correlation between the signs and symptoms of depression and sleep disturbance.

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