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# Association between difficulty sleeping and mild cognitive impairment in Latin American postmenopausal women: A REDLINC STUDY

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## AIM

To evaluate the association between mild cognitive impairment and two subjective measures of sleep difficulty in postmenopausal women living in nine Latin American countries

## METHOD

Cross-sectional study of the original REDLINC-XII project authored by the Latin American Network for Research in Climacteric and Menopause [REDLINC] to which the Women's Health Research Group belongs.

A form was applied between January-October 2023 to women (companions and women in their community), one or more periods of absence (postmenopausal).

Women residing in Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Mexico, Panamá and Peru. Sleep problems were identified with the Jenkins Sleep Scale (sleep disturbances) and with the third question of the Menopause Rating Scale (severe sleep disorders).

The MCI was established with Montreal Cognitive Assessment [MoCA].

Logistic regression was performed to evaluate the association between MCI and the two measurements of sleep problems.

Study approved by ethics committee [Universidad de Chile]

## RESULTS

Average age: 56.9 years

Sociodemographic characteristics n = 1185	Without deterioration mild cognitive (26-30) n=989 (83.4%)	With deterioration mild cognitive (<26) n=196 (16.6%)	p
Age (years)	55.4 ± 6.6	55.1 ± 7.9	ns <sup>1</sup>
Body Mass Index (kg/m2)	26.3 ± 4.9	27.3 ± 6.4	0.049 <sup>2</sup>
Number of children	2.2 ± 1.6	3.2 ± 2.4	0.0001 <sup>2</sup>
Have a partner	72.5 [69.7-75.3]	72.5 [66.1-78.8]	ns <sup>3</sup>
With sexual activity	68.7 [65.8-71.6]	58.7 [51.7-71.7]	0.007 <sup>3</sup>
University level of study	47.0 [44.1-50.3]	18.4 [12.9-23.8]	0.0001 <sup>3</sup>
Surgical menopause	19.8 [17.3-22.3]	25.5 [19.4-31.7]	ns <sup>3</sup>
Premature ovarian failure	23.1 [20.4-25.7]	17.9 [12.5-23.3]	ns <sup>3</sup>
Ever use of hormone therapy	39.9 [36.9-43.0]	15.5 [10.2-20.4]	0.0001 <sup>3</sup>
Sedentary lifestyle	48.0 [44.9-51.2]	68.4 [61.8-74.9]	0.0001 <sup>3</sup>
Current smoker	27.0 [24.2-29.8]	26.5 [20.3-32.8]	ns <sup>3</sup>
Current use psychotropics	33.8 [30.8-36.7]	31.1 [24.6-37.7]	ns <sup>3</sup>
Presence of any comorbidity	44.1 [41.0-47.2]	49.0 [41.9-56.0]	ns <sup>3</sup>

Data are presented as means ± standard deviation or as percentages [95%CI]. The p-value was determined with: (1) Student's T-test. (2) Mann-Whitney's U test. or (3) Chi-square test.

Sleep problems Distribution according to absence or presence of mild cognitive impairment	Without deterioration mild cognitive n= 989 (83.4%)	With deterioration mild cognitive n=196 (16.6%)	p
<b>Sleep disturbances(Jenkins Sleep Scale)*</b>			
Difficulty falling asleep	1.90 ± 1.38	2.23 ± 1.71	0.011 <sup>b</sup>
Waking up and no problem going back to sleep	2.21 ± 1.60	2.64 ± 1.86	0.003 <sup>b</sup>
Waking up and having trouble going back to sleep	1.85 ± 1.35	2.44 ± 1.79	0.001 <sup>b</sup>
Waking up feeling tired	2.05 ± 1.41	2.48 ± 1.85	0.002 <sup>b</sup>
Overall scale score	8.01 ± 4.69	9.79 ± 6.52	0.001 <sup>b</sup>
Women with sleep disturbances**	18.4 [16.0-20.8]	31.6 [25.1-38.2]	0.001 <sup>a</sup>

<b>Severe sleep disorders(Menopause Rating Scale)*</b>			
Punctuation of Question #3	1.07 ± 1.27	1.49 ± 1.52	0.001 <sup>b</sup>
Women with severe disorders***	16.6 [14.3-18.9]	28.3 [19.9-36.8]	0.001 <sup>a</sup>

\*The higher the score indicates greater alteration. \*\*Score ≥ 12 with Jenkins Sleep Scale. Score ≥ 3 on question #3 of the Menopause Rating Scale. Data are presented as means ± standard deviations or frequencies [95%CI]. P value: (a) Chi-squared. (b) U-Mann-Whitney test.

<b>Association between sleep problems and mild cognitive impairment Adjusted logistic regression</b>			
Model with Jenkins Sleep Scale	OR [IC95%]	Model with question #3 Menopause Rating Scale	OR [IC95%]
Sleep disturbances	1.88 [1.31-2.69]	Severe sleep disorders	1.81 [1.26-2.60]

Covariates: Lifestyle, number of children, use of hormone therapy, level of education, nutritional status

## CONCLUSIONS

In a group of Latin American postmenopausal women it was observed that having difficulty sleeping was associated with an 80% higher possibility of mild cognitive impairment

## CONTACT INFORMATION

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