

Impact of age and sex on sleep symptom networks on 35,808 individuals of the “Réseau Morphée”

C. Gauld^{1,2}, J.-A. Micoulaud-Franchi^{3,4}, S. Royant-Parola⁵, S. Hartley^{5,6}

¹Hospice Civils de Lyon, Lyon, France, ²Université Lyon 1, Institut des Sciences Cognitives Marc Jeannerod, Lyon, France, ³University Hospital of Bordeaux, University Sleep Clinic, Bordeaux, France, ⁴Université de Bordeaux, CNRS, SANPSY, UMR 6033, Bordeaux, France, ⁵Réseau Morphée, Paris, France, ⁶APHP Hôpital Raymond Poincaré, Paris, France

Background: Sleep symptoms depend on individual socio-demographic differences, including age and sex. Symptom network analyzes allow to model and visualize the interactions between clinical sleep variables in a population. Between two populations, they also allow to compare these interactions. The objective of this work is to study the differences in symptom networks depending on age and sex.

Methods: Data was collated from a free online questionnaire available via the « Réseau Morphée » website, with responses from a large French population of individuals concerned by their sleep. Thirty-nine clinical variables related to sleep health were studied, including sleep symptoms, sleep alterations, sleep behaviors and comorbidities. Data from validated scales: the Epworth Sleepiness Scale (ESS), the Insomnia Severity Index (ISI) and the Hospital Anxiety and Depression (HAD) using the sub scales for anxiety (HAD-A) and depression (HAD-D) were included. A network analysis of variables was performed to identify the most central variables. The centrality of sleep clinical variables was compared according to sex (male or female) and four age groups (from 16 to 30 years old, from 31 to 45 years old, from 46 to 55 and over 55 years).

Results: Data were obtained for 35,808 participants. 69.7% women with a mean age of 42.7 (+/- 15.7) years. The average ESS score was 9.48 (+/- 4.9) and the average ISI 16.3 (+/- 5.2). The overall structure of the symptom networks did not significantly different between the sexes or between the age groups. The two most central symptoms are « Non-restorative sleep » and « Excessive daytime sleepiness », for all age and sex groups. In the group of young subjects, aged 16 to 30, the two most central sleep behaviors are « Chronic Sleep Deprivation » (particularly in the female group) and « Chronic circadian misalignment ». In the older group of subjects, sleep-related respiratory and motor symptoms are more central than sleep behaviors.

Conclusions: The differences in symptom networks in a large population of individuals concerned by their sleep are not significant, which underlines overall similar interactions between the clinical variables of sleep, between sexes and age groups. Symptoms of non-restorative sleep and excessive daytime sleepiness are central in all groups.