

# Sleep Patterns and Related Risk Factors Among People Living with HIV/AIDS in Iran: A Two-Step Clustering Analysis

Samaneh Akbarpour<sup>1</sup>, Safieh Mohammadnejhad<sup>2</sup>, Arezu Najafi<sup>1</sup>, Valerie Earnshaw<sup>3</sup>,  
Mohammad Ebrahimzadeh Mousavi<sup>3</sup>, and Akbar Fotouhi<sup>2</sup>

<sup>1</sup>Tehran University of Medical Sciences

<sup>2</sup>Tehran University of Medical Sciences Department of Epidemiology and Biostatistics

<sup>3</sup>University of Delaware

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## Abstract

**Background:** Sleep plays an essential role in improving the quality of life of people living with HIV (PLWH); however, sleep patterns in this population are not well studied. This study aims to evaluate the sleep patterns and related risk factors among PLWH in Iran. **Methods:** A nationwide cross-sectional study was conducted with 1185 PLWH who attended Voluntary Counseling and Testing centers in 15 provinces in Iran between April 2021 and March 2022. The Berlin Obstructive Sleep Apnea questionnaire, Pittsburgh Sleep Quality Index, Epworth Sleepiness Scale and Insomnia Severity Index were used. A two-step clustering method was employed to identify the number of sleep clusters in PLWH. **Results:** The study found that 49.6% of PLWH had poor sleep quality, 21.15% reported sleepiness, and 42.7% had insomnia. Three sleep pattern clusters were identified: I. minor sleep problems (45.6%); II. sleep apnea, snoring at night, and sleepiness (27.8%), and III. poor sleep quality and insomnia (26.7%). Age (OR:1.03, 95%CI:1.01-1.05), academic education (OR:0.52, 95%CI:0.28-0.97), HIV duration, and CD4 (OR: 0.99, 95%CI:0.99-0.999) were associated with being in cluster two, while age (OR=1.02, 95%CI:1.007-1.04) and CD4 (OR=0.99, 95%CI:0.996-0.999) were associated with being in cluster three. PLWH with depression had higher odds of being in cluster three, and those with anxiety had higher odds of being in clusters two and three. **Conclusion:** Our findings suggest that a significant proportion of PLWH have poor sleep quality, sleepiness, and insomnia. The identification of three distinct sleep pattern clusters underscores the need for increased attention and tailored interventions to address the specific sleep issues experienced by PLWH.

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