

Drowsiness in elderly adults belonging to an institution in Santander

Somnolencia en adultos mayores pertenecientes a una institución de Santander

Maryi Yulieth Betancur Buitrago¹ | ORCID: 0009-0001-5535-475X

Paula Juliana Durán Quintero¹ | ORCID: 0009-0005-9860-1262

Luz Mery Contreras Ramos¹ | ORCID: 0000-0002-1858-6789

María Andreina Pulido Montes¹ | ORCID: 0000-0002-3978-8574

¹ Universidad Cooperativa de Colombia, Santander, Bucaramanga, Colombia.

Submitted: 29-08-2025 | Revised: 25-11-2025 | Accepted: 28-12-2025 | Published: 30-12-2025

ABSTRACT

Introduction: Somnolence refers to the tendency to fall asleep and can be classified based on its origin and manifestations into normal, pathological, optional, excessive, objective, and subjective forms. Objective: To determine the level of somnolence among older adults residing in a care facility in Santander. Methodology: This article presents a quantitative, descriptive, cross-sectional study of older adults residing in a care facility in Santander. Data collection included a sociodemographic questionnaire and the administration of the Epworth Sleepiness Scale to assess sleepiness among older adults at the Albeiro Vargas & Ángeles Custodios facility. Results: The study included 120 institutionalized older adults in Santander, of whom 58% were female, and the average age of the participants was 77 years. Furthermore, it was found that 52% of the older adults had normal sleep patterns and 36% exhibited abnormal sleepiness, a finding of particular significance for the study. Conclusion: The study revealed that 48% of older adults exhibit some level of sleepiness, suggesting that this represents a health risk. Similarly, it was identified that obstructive sleep apnea (46%) and symptoms of depression (33%) are factors that increase the likelihood of these individuals developing excessive daytime sleepiness (EDS).

Keywords: drowsiness; elderly; nursing; sleep apnea; daytime sleepiness; sleep.

RESUMEN

Introducción: la somnolencia tiene como concepto la tendencia de quedarse dormido en la cual se puede clasificarse dependiendo de su origen y manifestaciones como en formas normales, patológicas, optativas, excesivas, objetivas y subjetivas. Objetivo: determinar el nivel de somnolencia en los adultos mayores pertenecientes a una institución de Santander. Metodología: este artículo es un estudio cuantitativo, descriptivo de corte transversal con adultos mayores residentes en una institución de bienestar en Santander. La recopilación de datos incluyó un cuestionario sociodemográfico y la aplicación de un cuestionario como la escala de Epworth para detectar la somnolencia en los adultos mayores de la institución de Albeiro Vargas & Ángeles Custodios. Resultados: en el estudio realizado se contó con la participación de 120 adultos mayores institucionalizados en Santander, en el cual un 58% eran del sexo femenino y el promedio de edad de los participantes fue de 77 años. Además, se halló que el 52% de los adultos mayores tiene un sueño normal y el 36% una somnolencia anómala, identificando una presencia llamativa para el estudio. Conclusión: en la investigación realizada se evidenció que el 48% de los adultos mayores presentan algún nivel de somnolencia dando a entender que representa un riesgo para la salud. De igual manera se identificó que la apnea obstructiva del sueño 46% y síntomas de depresión (33%) son factores que aumenta el desarrollo de estas personas en presentar la somnolencia diurna excesiva (SDE).

Palabras clave: somnolencia; adulto mayor; enfermería; apnea del sueño; somnolencia diurna; sueño.

INTRODUCTION

Sleepiness is defined as a person's tendency to fall asleep and is also known as "the propensity to fall asleep or the ability to transition from wakefulness to sleep". Sleepiness is a complex term to classify, and as such, it has different types of classifications:

Normal sleepiness: This is usually the result of the circadian rhythm. .

Pathological sleepiness: This is usually a sleep disorder that causes a sleep deficit; it is typically subdivided into two types:

Habitual sleepiness: caused by the chronic condition of obstructive sleep apnea syndrome. .

Occasional drowsiness: This is most commonly caused by jet lag, a specific factor that induces circadian dysrhythmia or " " (time decompensation) due to frequent travel across time zones. .

Optative sleepiness refers to a person's tendency to fall asleep during social situations. .

Excessive sleepiness refers to a person feeling sleepy during times when they should be awake. .

Similarly, there are other important concepts that various authors have used as guides to conduct different studies and develop various instruments to assess sleepiness, such as the following:

Objective sleepiness refers to a person's tendency to fall asleep or their propensity to sleep. .

Subjective sleepiness refers to the subjective perception of the need to sleep or the transitional state between wakefulness and sleep, which is associated with various subjective symptoms, such as yawning, pupil constriction, decreased attention, and loss of tone in the neck extensor muscles. .

This suggests that in many health contexts, drowsiness is associated with a synonym for the concept of "fatigue," whereas in sleep medicine, this concept refers to "the sensation of exhaustion as an inability to perform physical activity at the level one would expect".

Globally, excessive daytime sleepiness (EDSS) is a significant problem in the United States, as 33% of adults experience this condition during the day, which is often associated with a 16% decline in functional capacity among this general population. . According to a longitudinal study, common causes of excessive daytime sleepiness (EDS) include obesity, being overweight, obstructive sleep apnea, diabetes mellitus, and respiratory diseases such as asthma and gastroesophageal reflux. These conditions disrupt nighttime sleep, leading to daytime sleepiness. Equally important are the psychiatric causes associated with this condition, such as depression and bipolar disorder. .

Similarly, at the national level, specifically in Cali, Colombia, a study of 605 older adults revealed a prevalence of excessive daytime sleepiness (EDS) of 10.5%, which was significantly associated with socioeconomic status, indicating that sleepiness is more prevalent (13%) in the low socioeconomic stratum of this population group. .

In contrast, in the local context of Bucaramanga, no studies have been conducted to measure sleepiness in the older adult population; however, research on sleepiness has been conducted among young adult medical students, revealing that 81% of this studied population is at high risk for excessive daytime sleepiness (EDS). . For this reason, the objective of this study () was to determine the level of sleepiness among older adults at an institution in Santander.

METHODS

Study type, population, and sample:

This is a quantitative, descriptive, cross-sectional study. . Data were collected during the first and second semesters of 2024. The study population consists of institutionalized older adults at a welfare center in Santander. The sample comprises 120 older adults from the "Albeiro Vargas & Ángeles Custodios" institution.

Inclusion criteria:

Individuals without difficulties in spoken language or hearing

Individuals over 18 years of age who are alert and oriented

Institutionalized and noninstitutionalized individuals enrolled in the program at the Albeiro Vargas & Ángeles Custodios facility.

Exclusion criteria:

Older adults live in areas that are difficult to access because of their geographic location.

Older adults with communication difficulties or who speak a language other than Spanish.

Study design:

To collect information, a sociodemographic questionnaire was created that asked about age, sex, marital status, socioeconomic status, place of origin, religion, medical diagnosis, and medications taken.

To assess sleepiness, the Epworth Sleepiness Scale was used; this scale consists of 8 questions addressing monotonous situations in which sleepiness is likely to occur. Each individual answers each question on a scale from 3 to 0, where 0 indicates no chance of falling asleep and 3 represents a greater likelihood of falling asleep. . The sum of each question yields a total score ranging from 0 to 24. A total score of <10 is considered normal, 10 to 12 is considered marginal sleepiness, and >12 is considered excessive sleepiness. . Additionally, this instrument has a Cronbach's α coefficient of 0.85. .

Similarly, an informed consent form was provided to each older adult in hard copies for them to sign, confirming their participation in the research. The scale used to study the phenomenon was administered virtually via a Google Forms questionnaire; equally importantly, the validity of the data obtained was ensured, and patient participation was voluntary. Furthermore, this study was reviewed by the institution's research ethics committee on March 14, 2024, and received approval on April 16 of the same year.

RESULTS

A digital questionnaire was administered via Google Forms for the study's analysis, and the data were transferred to an Excel spreadsheet. This document included sociodemographic variables and the Epworth Sleepiness Scale to assess the level of sleepiness among the 120 older adults at the Albeiro Vargas & Ángeles Custodio institution.

The Epworth Sleepiness Scale was used as a tool to identify the presence of sleepiness in this population group from the Department of Santander, Colombia. A total of 120 people participated in the study: 43% (51 men) and 58% (69 women), ranging in age from 60 to 93 years, with a mean age of 76.7 years.

Analysis of the data revealed that 52% of older adults have normal sleep, 12% of this population exhibit moderate sleepiness, and 36% of these individuals exhibit abnormal sleepiness. This finding indicates a somewhat high rate in this population, suggesting that sleepiness may develop into a pathological condition.

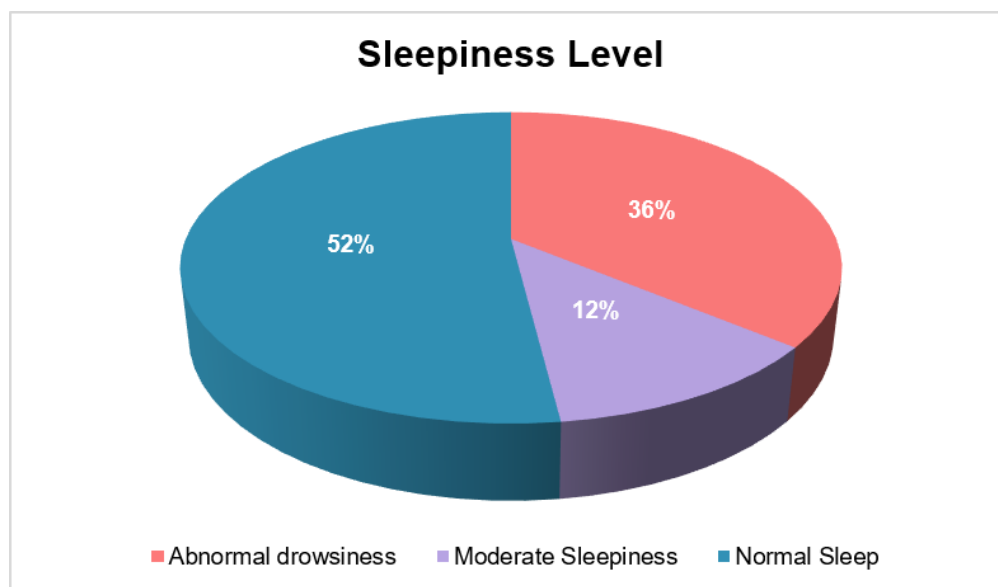


Figure 1. Sleepiness Results for Older Adults

Source: Author's own work.

On the other hand, the study population presented various underlying conditions: 60% had cardiovascular diseases, 26% had metabolic disorders, and 21% had degenerative conditions. Additionally, within this population, 46% were found to have a moderate risk of obstructive sleep apnea (OSA), and 33% exhibited symptoms of depression.

The analysis also revealed that 57% of the participants had visual impairments and that 10% of the older adults experienced cognitive decline, either because of age or old age. Similarly, older adults relied on financial support from the government or assistance from a family member, with the majority living in low socioeconomic strata due to a lack of resources.

DISCUSSION

Based on the findings of our study, which was conducted with 120 institutionalized older adults, 48% of the participants reported varying levels of sleepiness, 36% of the older adults reported abnormal levels of sleepiness, and 12% reported moderate sleepiness. These results reveal a higher prevalence than that reported in international studies on excessive daytime sleepiness (EDS). For example, a study conducted by physicians on EDS involving 40 noninstitutionalized African American older adults revealed that only 25% of the participants reported daytime sleepiness according to the Epworth Sleepiness Scale (ESS), even though the average number of daily naps was 2.5 and the average duration of each nap was 33 minutes. This suggests that although naps are common, the reported subjective drowsiness is typically lower in community settings than in institutionalized older adults, such as those in this study.

Similarly, Ren and other researchers reported that the prevalence of excessive daytime sleepiness reached 9.3% among rural older adults in China, suggesting that it is linked to depression, the risk of obstructive sleep apnea (OSA), and poor sleep quality.

Similarly, Huang and colleagues reported a 16% prevalence among community-dwelling older adults in Taiwan and reported that factors such as disability and short sleep duration increase the risk of excessive daytime sleepiness (EDS); however, in China, a study of 903 older adults reported a 35% prevalence of poor sleep quality. These figures are notably lower than those obtained in this study, which could be explained by the institutional setting in which our population lives, where routines, comorbidities, and functional dependence are generally more pronounced.

In line with this hypothesis, a systematic review conducted by nurses and physicians revealed that sleep-related problems among institutionalized older adults in China reached a combined prevalence of 43%, a figure that more closely resembles our findings. These parallel highlights the impact that the institutional setting has on sleep quality and sleepiness.

In this study, 60% of older adults had cardiovascular diseases, 26% had metabolic diseases, and 21% had degenerative conditions. The presence of these conditions could explain the high levels of sleepiness, as various studies have established that physical comorbidities are associated with this problem. A study from Cali demonstrated that although the EDS in physically active older adults is 10.5%, it increases among those in a low socioeconomic stratum, which aligns with our population, where 85.8% are in the subsidized health plan.

Furthermore, several studies have reported that hypertension, depression, and the risk of OSA are among the main factors contributing to the development of EDS. Gordon and other authors reported that among community-dwelling older adults, 9% experience frequent daytime fatigue and 8% have possible symptoms of OSA, in addition to nearly 20% using sleeping pills regularly. These factors may also be present in the study population, where high consumption of medications such as antihypertensives (50%), analgesics (55%), and tranquilizers (8%) could directly influence sleep patterns.

Furthermore, a psychiatric research article demonstrated that a greater tendency toward daytime sleepiness is associated with a significant decline in cognitive ability, even among older adults with no history of depression or dementia. In this study, 57% of participants reported vision problems, whereas 10% reported cognitive impairment—conditions that could contribute to increased inactivity and disrupted sleep.

Finally, Etindele Sosso et al. (2023), in their review focused on Latin America, reported that sleep disorders are closely related to social factors such as poverty, low educational attainment, and environmental stress—aspects that also affect our population, where 74% have limited educational attainment, reinforcing the possible connection between social vulnerability and sleepiness.

Overall, international evidence suggests that daytime sleepiness among older adults is a phenomenon with multiple causes that depend on health status, the environment, medications, and social factors. The findings of this study indicate a higher prevalence than that observed in community groups, which is closer to the rates reported for adults living in institutions, highlighting the importance of implementing multidimensional interventions in such settings to improve sleep quality and overall well-being.

CONCLUSIONS

In conclusion, the prevalence of sleepiness among older adults in our study was high, with 48% of participants exhibiting some level of sleepiness, a phenomenon that can lead to health problems in the geriatric population.

Furthermore, these individuals were found to have a 46% risk of obstructive sleep apnea and a 33% prevalence of depressive symptoms, indicating the presence of additional risk factors for the development of excessive daytime sleepiness (EDSS) among older adults.

Finally, the literature and our analysis indicate that social conditions, low socioeconomic status, and sensory and cognitive problems suggest the presence of sleepiness in this population group.

RECOMMENDATIONS

It is recommended that institutional programs be developed to promote healthy habits and sleep hygiene so that these individuals can establish a routine to help optimize their sleep conditions and thereby identify the signs and symptoms of abnormal sleepiness.

It is recommended that periodic screenings be conducted in this population to detect sleepiness and obstructive sleep apnea.

It is recommended that research be further promoted in the department of Santander and at the national level because of the scarcity of local studies, with the aim of thoroughly investigating the socioenvironmental factors that influence sleepiness.

REFERENCES

1. Avila Ovalle, I. J., Arango Arango, A. C., Cruz Mosquera, F. E., Gómez-Barreiro, N. A., Márquez-Pérez, Y. A., Perlaza, C. L., Lozano Gómez, K., Zamora-Vidal, S., & Garzón -Morera, M. N. (2024). Excessive daytime sleepiness in older adults of a municipal physical activity program. *Revista de La Facultad de Ciencias Médicas*, 81(1), 40–52. <https://doi.org/10.31053/1853.0605.V81.N1.41826>
2. Bai, X., Liu, S., Lv, Y., Luo, Y., & Jiang, Y. (2025). Prevalence of sleep disorders among older adults in Chinese older adults care institutions: a systematic review and meta-analysis. *Frontiers in Public Health*, 13, 1664136. <https://doi.org/10.3389/FPUBH.2025.1664136>
3. Chen, Y., Su, F., Xiang, H., & Xia, J. (2025). Investigation of Sleep Disorders and Related Influencing Factors Among the Elderly in Southeast Coastal Regions of China: A Cross-Sectional Survey Analysis. *Clinical Interventions in Aging*, 20, 171–181. <https://doi.org/10.2147/CIA.S482763>
4. Gordon, N. P., Yao, J. H., Brickner, L. A., & Lo, J. C. (2022). Prevalence of sleep-related problems and risks in a community-dwelling older adult population: a cross-sectional survey-based study. *BMC Public Health* 2022 22:1, 22(1), 2045-. <https://doi.org/10.1186/S12889-022-14443-8>
5. Hernández, S. R., Fernández, C. C., & Baptista, L. P. (1997). METODOLOGÍA DE LA INVESTIGACIÓN (MC-GRAW-HILL). https://www.uv.mx/personal/cbustamante/files/2011/06/metodologia-de-la-investigaci%C3%83%C2%B3n_sampieri.pdf
6. Huang, C. J., Hsu, N. W., & Chen, H. C. (2024). Prevalence, dimensions, and correlates of excessive daytime sleepiness in community-dwelling older adults: the Yilan study, Taiwan. *Annals of Medicine*, 56(1), 2352028. <https://doi.org/10.1080/07853890.2024.2352028>;JOURNAL:JOURNAL:IANN20;PAGE:STRING:ARTICLE/CHAPTER
7. McPhillips, M. V., Li, J., Hodgson, N. A., Cacchione, P. Z., Dickson, V. V., Gooneratne, N. S., & Riegel, B. (2020). Daytime sleepiness and napping in nursing-home eligible community dwelling older adults: A mixed methods study. *Gerontology and Geriatric Medicine*, 6, 2333721420970730. <https://doi.org/10.1177/2333721420970730>
8. Kriti, D., Mansukhani, M., Silber, M., & Kolla, B. (2021). EXCESSIVE DAYTIME SLEEPINESS. *Pediatrics Integral*, 27(8), 1228–2729. <https://doi.org/10.1385/1-59259-859-5:199>
9. Niño García, J. A., Barragán Vergel, M. F., Ortiz Labrador, J. A., Ochoa Vera, M. E., & González Olaya, H. L. (2019). Factores asociados con somnolencia diurna excesiva en estudiantes de Medicina de una institución de educación superior de Bucaramanga. *Revista Colombiana de Psiquiatría*, 48(4), 222–231. <https://doi.org/10.1016/J.RCP.2017.12.002>
10. Ovalle, I. J. A., Arango, A. C. A., Mosquera, F. E. C., Gómez-Barreiro, N. A., Márquez-Pérez, Y. A., Perlaza, C. L., Gómez, K. L., Zamora-Vidal, S., & -Morera, M. N. G. (2024). Somnolencia diurna excesiva en adultos mayores de un programa municipal de actividad física. *Revista de La Facultad de Ciencias Médicas de Córdoba*, 81(1), 40–52. <https://doi.org/10.31053/1853.0605.V81.N1.41826>
11. Ren, J., Liu, R., Zhao, T., Lu, J., Liu, C., Hou, T., Wang, Y., Cong, L., Du, Y., Tang, S., & Qiu, C. (2024). Prevalence and associated factors of excessive daytime sleepiness in rural older adults: a population-based study. *Sleep and Breathing* 2024 28:3, 28(3), 1459–1464. <https://doi.org/10.1007/S11325-024-03004-5>
12. Rosales, M. E., & Rey De Castro, M. J. (2010). Somnolencia: Qué es, qué la causa y cómo se mide. *Acta Médica Peruana*, 27(2), 137–143. http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1728-59172010000200010&lng=es&nrm=iso&tIng=en
13. Sandoval, Rincón. M., Alcalá, Lozano. R., Herrera, Jiménez. I., & Jiménez, Genchi. A. (2013). Validación de la Escala de Somnolencia de Epworth en población Mexicana. *Gaceta Médica de México*, 149(4), 409–416. https://www.anmm.org.mx/GMM/2013/n4/GMM_149_2013_4_409-416.pdf
14. Soso, F. A. E., Silva, F. T., Rodrigues, R. Q., Carvalho, M., Zoukal, S., & Zarate, G. C. (2023). Social, environmental and economic risk factors and determinants of sleep disturbances in Latin America: A systematic review and a meta-analysis of public health literature. *MedRxiv*, 2023.06.02.23290915. <https://doi.org/10.1101/2023.06.02.23290915>
15. Wu, J., Wu, Z., Xie, C., Lin, Y., Fu, Z., Zhu, L., Qi, W., & Wang, H. (2023). A high propensity for excessive daytime sleepiness independent of lifestyle is associated with cognitive performance in community-dwelling older adults. *Frontiers in Psychiatry*, 14, 1190353. <https://doi.org/10.3389/FPSYT.2023.1190353/BIBTEX>

FUNDING

No financing

CONFLICT OF INTEREST

None

AUTHORSHIP CONTRIBUTIONS

Conceptualization: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Data cleaning: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Formal analysis: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Research: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Methodology: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Project administration: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Resources: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Software: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Supervision: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Validation: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Visualization: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.

Writing – Review and Editing: Maria Andreina Pulido Montes, Paula Juliana Durán Quintero, Maryi Yulieth Betancur Buitrago, Luz Mery Contreras Ramos.