

# Sleep Problems and Psychological Distress

Subjects: Psychology

Contributor: Giuseppina Elena Cipriani

Psychological distress is defined as a set of non-specific symptoms concerning depressive mood and anxiety manifestation. It refers to a state of emotional suffering associated with stressors that are difficult to deal with in daily life.

Psychological distress may influence sleep patterns and seems to exacerbate age-related sleep problems.

Keywords: sleep problems ; healthy aging ; psychological distress ; depressive symptoms ; anxiety ; cognitive decline ; SARS-CoV-2 ; COVID-19 pandemic

---

## 1. Introduction

Previous studies showed that poor sleep is related to worse cognitive functioning in older people (e.g., <sup>[1]</sup>). For example, some studies show an association between daytime sleepiness and impaired attention, orientation, memory, and slow processing speed <sup>[2][3][4]</sup>. Sleep problems are also associated with subjective cognitive decline <sup>[5]</sup> and cognitive impairment <sup>[6]</sup>. Nevertheless, this relationship is bidirectional: sleep problems could affect cognitive decline but also sleep disruption could be an early sign of cognitive impairment <sup>[4]</sup>.

Aging is also characterized by a reduced proportion of Rapid Eye Movement (REM) sleep, a substantial reduction in non-REM (NREM) stage three sleep, and fragmented sleep with frequent interruptions, leading to a shorter total sleep time and greater amount of wake after sleep onset <sup>[7]</sup>. This leads older people to a reduction in daily functioning <sup>[8]</sup>, increasing the risk of developing cognitive decline <sup>[9]</sup> and highlighting a potential causal association between sleep disorders and the pathogenesis of neurocognitive diseases, as typical aspects of neurodegenerative disorders <sup>[10]</sup>.

The review by Cipriani et al. (2021) is the first conducted to synthesize the existing literature on sleep problems and psychological distress in healthy aging in relation to the SARS-CoV-2 pandemic.

To this end, the authors selected studies from the literature that allowed investigating and summarizing (a) the type and frequency of sleep disturbances; (b) possible associations between sleep disturbances and other variables related to the COVID-19 lockdown, such as negative changes in psychological wellbeing, in older adults during the COVID-19 pandemic. After the identification and screening phases, 11 studies [59–69] were included.

## 2. Limitations of the Study and Future Research

The present review represents the first attempt to describe and synthesize the data on sleep patterns and psychological related factors in older adults during the COVID-19 pandemic. Some limitations should be addressed, and the results considered with caution.

First, the analyzed studies used various instruments for the assessment of sleep problems, also focusing on different features (e.g., quality, duration, disturbances). This aspect did not allow carrying out a systematic review, nor a meta-analysis, on the collected data. Furthermore, most of the studies adopted ad hoc survey items instead of specific tools for the sleep assessment. Such aspects may have led to bias regarding the assessment of the actual sleep problems experienced by older subjects included in the studies. However, the challenge in conducting a more in-depth sleep evaluation (i.e., face-to-face assessment) may be due to home-confinement measures adopted to limit the spread of SARS-CoV-2. Nevertheless, the paucity of the literature on this topic on the one hand, and the importance of this issue on the other, make more analysis urgent. Indeed, most of the selected studies showed a worsening in sleep quality and/or quantity in older adults during the COVID-19 pandemic.

Finally, regarding the neuro-psycho-geriatric assessment, some critical issues should be considered. The majority of the studies did not perform a cognitive assessment to verify whether the subjects were in normal cognitive aging; this aspect could have led to biased results. Considering the close relationship between sleep disorders and cognitive decline in the

older population [9], it would be useful to investigate this aspect during the pandemic period through a more in-depth neuropsychological assessment. In addition, other factors that may affect cognitive decline should be considered, such as depression and anxiety [11][12], which have been previously related to sleep disorders. In fact, during the COVID-19 lockdown, many people experienced feelings of frustration, boredom, but also depression and anxiety [13]. This condition influenced lifestyle habits and behaviors with consequences on sleep quality and daily functioning [14].

The lifestyle changes occurred because of the COVID-19 home confinement, which might have exacerbated symptoms in older adults, particularly the frailest ones, leading to the so-called “Corona-Frailty” [15] and to higher perceived threat of being infected by the COVID-19 virus [16]. Indeed, frailty is a condition characterized by greater vulnerability associated with age-related decline in biological functions and systems, which might affect the ability to deal with stressors [17]. In the literature, little is known about older people's functionality during the COVID-19 lockdown. Indeed, frailty could not be fully investigated without a face-to-face assessment. Furthermore, studies conducted before the COVID-19 pandemic highlighted correlations between mental health and both polypathology [18][19] and frailty status [20][21]. Future studies should investigate these relationships in the older population considering home confinement measures due to COVID-19.

### 3. Conclusions

The evidence from the selected studies seems to suggest that sleep problems may affect psychological and physical wellbeing in older people during the COVID-19 pandemic [22][23][24][25], although the results are not definitive due to the little evidence available on healthy aging.

Since the studies reviewed were conducted in the first part of the COVID-19 pandemic (between March and September 2020), future research is needed to assess the long-term effects of SARS-CoV-2 restrictive measures using a homogeneous methodology to assess sleep disturbances and its consequences on mental and physical health in older adults.

These aspects are important to consider as changes in sleep patterns, sleep architecture, and circadian rhythm might influence biological systems involved in age-related and chronic diseases [26]. Nevertheless, definitive conclusions cannot also be made due to the reciprocal relationship between sleep and mood changes, which should be better clarified by new research studies. However, a better comprehension of age-related sleep changes may help us improve our knowledge to develop new solutions for healthcare approaches in the older population.

---

### References

1. Dzierzewski, J.M.; Dautovich, N.; Ravyts, S. Sleep and Cognition in Older Adults. *Sleep Med. Clin.* 2018, 13, 93–106.
2. Ohayon, M.M.; Vecchierini, M.F. Daytime sleepiness and cognitive impairment in the elderly population. *Arch. Intern. Med.* 2002, 162, 201–208.
3. Tsapanou, A.; Gu, Y.; O'Shea, D.; Eich, T.; Tang, M.X.; Schupf, N.; Manly, J.; Zimmerman, M.; Scarmeas, N.; Stern, Y. Daytime somnolence as an early sign of cognitive decline in a community-based study of older people. *Int. J. Geriatr. Psychiatry* 2016, 31, 247–255.
4. Tsapanou, A.; Scarmeas, N.; Stern, Y. Sleep and the aging brain. A multifaceted approach. *Sleep Sci.* 2020, 13, 152–156.
5. Tsapanou, A.; Vlachos, G.S.; Cosentino, S.; Gu, Y.; Manly, J.J.; Brickman, A.M.; Schupf, N.; Zimmerman, M.E.; Yannakoulia, M.; Kosmidis, M.H.; et al. Sleep and subjective cognitive decline in cognitively healthy elderly: Results from two cohorts. *J. Sleep Res.* 2019, 28, e12759.
6. Wennberg, A.M.V.; Wu, M.N.; Rosenberg, P.B.; Spira, A.P. Sleep Disturbance, Cognitive Decline, and Dementia: A Review. *Semin. Neurol.* 2017, 37, 395–406.
7. Koo, D.L.; Kim, J. The Physiology of Normal Sleep. *Hanyang Med. Rev.* 2013, 33, 190–196.
8. Scullin, M.K. Do Older Adults Need Sleep? A Review of Neuroimaging, Sleep, and Aging Studies. *Curr. Sleep Med. Rep.* 2017, 3, 204–214.
9. Krivanek, T.J.; Gale, S.A.; McFeeley, B.M.; Nicastri, C.M.; Daffner, K.R. Promoting Successful Cognitive Aging: A Ten-Year Update. *J. Alzheimers Dis.* 2021, 81, 871–920.
10. Nedergaard, M.; Goldman, S.A. Glymphatic failure as a final common pathway to dementia. *Science* 2020, 370, 50–56.
11. Cooper, C.; Sommerlad, A.; Lyketsos, C.G.; Livingston, G. Modifiable predictors of dementia in mild cognitive impairment: A systematic review and meta-analysis. *Am. J. Psychiatry* 2015, 172, 323–334.

12. Ismail, Z.; Elbayoumi, H.; Fischer, C.E.; Hogan, D.B.; Millikin, C.P.; Schweizer, T.; Mortby, M.E.; Smith, E.E.; Patten, S.B.; Fiest, K.M. Prevalence of depression in patients with mild cognitive impairment: A systematic review and meta-analysis. *JAMA Psychiatry* 2017, 74, 58–67.
13. Franceschini, C.; Musetti, A.; Zenesini, C.; Palagini, L.; Scarpelli, S.; Quattropiani, M.C.; Lenzo, V.; Freda, M.F.; Lemmo, D.; Vegni, E.; et al. Poor Sleep Quality and Its Consequences on Mental Health During the COVID-19 Lockdown in Italy. *Front. Psychol.* 2020, 11, 574475.
14. Altena, E.; Baglioni, C.; Espie, C.A.; Ellis, J.; Gavrilloff, D.; Holzinger, B.; Schlarb, A.; Frase, L.; Jernelöv, S.; Riemann, D. Dealing with sleep problems during home confinement due to the COVID-19 outbreak: Practical recommendations from a task force of the European CBT-I Academy. *J. Sleep Res.* 2020, 29, e13052.
15. Bonanad, C.; García-Blas, S.; Tarazona-Santabalbina, F.; Sanchis, J.; Bertomeu-González, V.; Fácila, L.; Ariza, A.; Núñez, J.; Cordero, A. The Effect of Age on Mortality in Patients With COVID-19: A Meta-Analysis With 611,583 Subjects. *J. Am. Med. Dir. Assoc.* 2020, 21, 915–918.
16. Bartoli, M.; Canessa, N.; Cipriani, G.E.; Cappa, S.F.; Amanzio, M. The Role of Neuropsychological Factors in Perceived Threat of SARS-CoV-2 in Healthy Ageing. *Int. J. Environ. Res. Public Health* 2021, 18, 5847.
17. WHO Clinical Consortium on Healthy Ageing. Report of Consortium Meeting 1–2 December 2016 in Geneva, Switzerland; World Health Organization: Geneva, Switzerland, 2017.
18. Calderón-Larrañaga, A.; Vetrano, D.L.; Welmer, A.K.; Grande, G.; Fratiglioni, L.; Dekhtyar, S. Psychological correlates of multimorbidity and disability accumulation in older adults. *Age Ageing* 2019, 48, 789–796.
19. Jiao, C.; Leng, A.; Nicholas, S.; Maitland, E.; Wang, J.; Zhao, Q.; Xu, L.; Gong, C. Multimorbidity and Mental Health: The Role of Gender among Disease-Causing Poverty, Rural, Aged Households in China. *Int. J. Environ. Res. Public Health* 2020, 17, 8855.
20. Feng, L.; Nyunt, M.S.; Feng, L.; Yap, K.B.; Ng, T.P. Frailty predicts new and persistent depressive symptoms among community-dwelling older adults: Findings from Singapore longitudinal aging study. *J. Am. Med. Dir. Assoc.* 2014, 15, 76.e7–76.e12.
21. Jin, Y.; Si, H.; Qiao, X.; Tian, X.; Liu, X.; Xue, Q.L.; Wang, C. Relationship Between Frailty and Depression Among Community-Dwelling Older Adults: The Mediating and Moderating Role of Social Support. *Gerontologist* 2020, 60, 1466–1475.
22. Costi, S.; Paltrinieri, S.; Bressi, B.; Fugazzaro, S.; Giorgi Rossi, P.; Mazzini, E. Poor Sleep during the First Peak of the SARS-CoV-2 Pandemic: A Cross-Sectional Study. *Int. J. Environ. Res. Public Health* 2021, 18, 306.
23. Carlos, A.F.; Poloni, T.E.; Caridi, M.; Pozzolini, M.; Vaccaro, R.; Rolandi, E.; Cirrincione, A.; Pettinato, L.; Vitali, S.F.; Tronconi, L.; et al. Life during COVID-19 lockdown in Italy: The influence of cognitive state on psychosocial, behavioral and lifestyle profiles of older adults. *Aging Ment. Health* 2021, 1–10.
24. De Pue, S.; Gillebert, C.; Dierckx, E.; Vanderhasselt, M.A.; De Raedt, R.; Van den Bussche, E. The impact of the COVID-19 pandemic on wellbeing and cognitive functioning of older adults. *Sci. Rep.* 2021, 11, 4636.
25. Grossman, E.S.; Hoffman, Y.; Palgi, Y.; Shrira, A. COVID-19 related loneliness and sleep problems in older adults: Worries and resilience as potential moderators. *Personal. Individ. Differ.* 2021, 168, 110371.
26. D'Ambrosio, C.; Redline, S. Sleep Across the Lifespan. In *Impact of Sleep and Sleep Disturbances on Obesity and Cancer; Energy Balance and Cancer*; Redline, S., Berger, N., Eds.; Springer: New York, NY, USA, 2014; Volume 8.