

BRIEF REPORT

INSOMNIA

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Insomnia is a sleep disorder characterized by difficulties in sleep initiation, maintenance, duration, or quality, despite adequate opportunity for sleep, resulting in impaired daytime functioning.^{1,2} Insomnia constitutes a significant burden on the healthcare system of every country, since it is associated with frequent use of healthcare services and increased healthcare costs. The direct and indirect costs of insomnia in the United States exceed \$100 billion annually.²

The prevalence of insomnia in the general population ranges from 8% to 40%, depending on the definition applied. It is estimated that 8-10% of the general population suffers from chronic insomnia, while 20-30% experience poor sleep, including insomnia, difficulty initiating or maintaining sleep, and early morning awakening.¹ Insomnia is a common sleep disorder in the United States, with prevalence rates ranging from 15% to 24%.³ In Europe, approximately 6-7% of the population has a diagnosis of insomnia, while 33–37% report insomnia symptoms.^{4,5}

There are two phenotypes of chronic insomnia. The first phenotype is characterized by physiological hyperarousal (short sleep duration and stress system activation), which is associated with significant adverse health outcomes. The second phenotype is associated with cognitive-emotional and cortical arousal, but not physiological hyperarousal, and is more likely to remit over time.¹

Insomnia is strongly associated with a range of demographic determinants, with female sex and older age consistently identified as key risk factors. In particular, women especially those of advanced age, exhibit higher prevalence rates of insomnia and greater use of hypnotic medications compared with men.^{5,6} Evidence from Poland further supports this pattern, showing that sleep disturbances

affect more than half of participants, with the highest prevalence observed among women aged 60–79 years.⁶ In addition, aging-related biological changes contribute significantly to increased vulnerability to insomnia in older adults, including alterations in circadian rhythms that lead to more fragmented sleep, as well as early morning awakening.² Likewise, findings from Greece, specifically in Thrace, demonstrated that insomnia is independently linked to female sex, older age, obesity, chronic disease, and adverse marital status, such as being divorced or widowed.⁷

There is observed high prevalence of insomnia among multiple physical and psychiatric conditions, including depression, autism spectrum disorder, bipolar disorder, dementia, diabetes mellitus, and cardiovascular diseases. Therefore, insomnia may play an important role in the development of multimorbidity.^{4,5} This association appears to be particularly evident among older adults, where the presence of chronic conditions, such as cardiovascular disease, systemic inflammation, and depression, may further increase the prevalence and severity of insomnia.⁸ Moreover, a study conducted in France and 12 other countries identified significant associations between short-term insomnia and psychiatric comorbidities, including mood, anxiety, substance use, and psychotic disorders, underscoring its close relationship with mental health conditions.⁹ In addition, considerable overlap exists between insomnia and depression, with evidence supporting a bidirectional relationship between the two disorders. Although insomnia has traditionally been considered secondary to depression or other mood disorders, evidence suggests that it may act as a precipitating factor for the onset of depression.¹⁰ Hyperactivity of the hypothalamic–pituitary–adrenal (HPA) axis appears to

play a role in the development of depression among individuals with short sleep duration, while psychological mechanisms are also involved in the pathophysiology of insomnia.¹

Other factors contributing to the persistence of insomnia include maladaptive behaviors, dysfunctional thoughts, and ineffective coping strategies that allow insomnia to continue even after the initial precipitating factors have been resolved. Dysfunctional beliefs, unrealistic expectations also contribute to its maintenance.² Alcohol consumption and insomnia share a complex relationship. The prevalence of insomnia among individuals with alcohol dependence ranges from 36% to 91%. Chronic insomnia increases the risk of relapse in alcoholism. It is estimated that 15-30% of individuals consume alcohol as a means of coping with insomnia. Similar findings have been reported in relation to cannabis use, as the initial sleep-promoting effects are often followed by the development of tolerance. Cannabis users frequently report sleep disturbances, while withdrawal symptom, including disrupted sleep and vivid dreams may further complicate cessation.²

Although insomnia and sleep disorders represent a major public health challenge in modern societies, considerable variability exists in reported prevalence rates and associated factors. These discrepancies may be attributed to differences in study populations, study periods, definitions of insomnia, and assessment methodologies. Furthermore, modern lifestyles characterized by rapid pace and increased demands have reduced the time available for adequate sleep in both quantity and quality. The COVID-19 pandemic has emerged as an additional burden on sleep health.

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