

## The Influence of Insomnia on the Wellbeing and Functioning of Young Adults: A Comprehensive Review

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**Abstract:** Insomnia, impacting 6-10% of the global population, is a multifaceted challenge to health and productivity. Chronic insomnia, linked to various health issues, demands comprehensive management. Traditional pharmacotherapies, effective yet raising dependency concerns, contrast with the nonpharmacological alternative, Cognitive Behavioral Therapy for Insomnia (CBT-I), addressing root causes. This paper explores diagnostic criteria, etiological factors, and patient education in insomnia management, incorporating keywords like behavioral therapy, chronic insomnia, and general sleep disturbances. Discussion emphasizes the evolving landscape, where behavioral interventions, notably CBT-I, demonstrate lasting efficacy, urging a shift towards personalized and comprehensive solutions. Societal consequences, including reduced productivity, underscore the imperative for effective, diversified approaches beyond traditional medications. The intricate challenges of insomnia necessitate a nuanced, individualized approach, with behavioral therapies as pivotal components, aligning with keywords such as non-pharmacological therapy and pharmacological.

**Keywords:** Behavioral therapy, Chronic insomnia, General sleep disturbances, Non-pharmacological therapy and pharmacological.

**Introduction:** Insomnia is a sleep disorder characterized by reduced quality, duration, or efficiency of sleep, affecting 6–10% of the population i.e. roughly 1 in 3 people worldwide. It is when you experience disruptions in how you feel or function because you aren't sleeping well or sleeping enough. Insomniacs typically report that it takes them an excessive length of

time to fall asleep and/or that they wake up frequently during the night - proven by polysomnographic evaluation.<sup>1</sup>

Chronic insomnia disorder involves ongoing difficulties with initiating or maintaining sleep at least three times per week, persisting for at least 3 months, and causing daytime impairment.

Insomnia can be classified into subtypes based on the timing of sleep difficulties, such as sleep-onset, sleep-maintenance, terminal insomnia, or combined insomnia. Insomnia can be classified in a number of ways.<sup>3</sup> For eg - according to time i.e. acute or chronic; according to cause i.e. primary (25%) or secondary (more common); according to the type of sleep difficulties i.e. classification into subtypes based on the timing of sleep difficulties, such as sleep-onset, sleep-maintenance, terminal insomnia, or combined insomnia. Sleep onset insomnia: refers to trouble falling asleep. maintenance insomnia: refers to waking up in the middle of the night but being able to fall back asleep. It's the most common form terminal/early waking insomnia: refers to waking up too early in the morning and not being able to fall back asleep.<sup>4,5</sup>

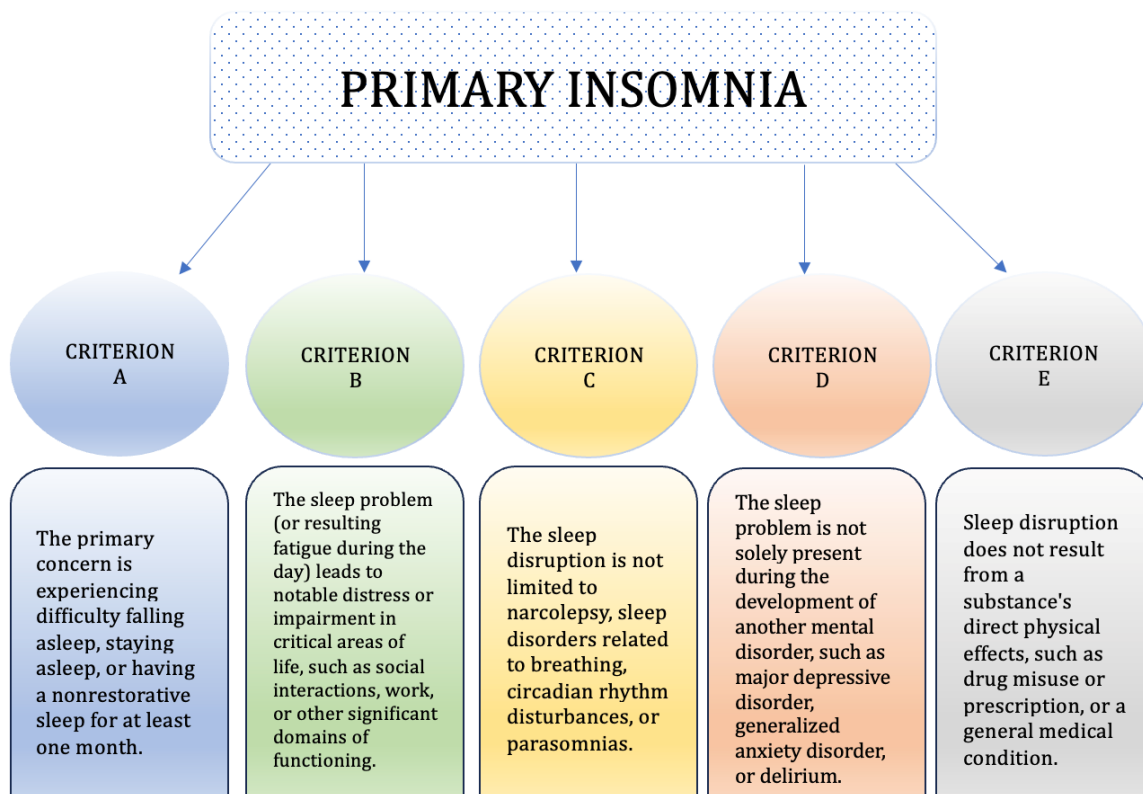
Beyond its impact on sleep, insomnia can adversely affect physical and mental health, quality of life, and daytime function, contributing to conditions like cardiovascular disease, diabetes, depression, and impaired cognitive function. Insomnia can have wide-ranging consequences, including increased risk of premature mortality due to increased risk of hypertension, MI, stroke, OSA, Type 2 diabetes mellitus, psychosis and depression; serious health conditions, reduced quality of life, impaired neurocognitive functioning, and economic burdens through healthcare utilization and decreased work productivity.<sup>6</sup>

Conventional treatments for chronic insomnia typically involve pharmacotherapies such as benzodiazepines and nonbenzodiazepine hypnotics, as well as psychological interventions. However, concerns about dependency and short-term use surround the use of benzodiazepines. An alternative nonpharmacological approach is Cognitive Behavioral Therapy for Insomnia (CBT-I), which targets factors contributing to insomnia. CBT-I employs strategies like stimulus control, sleep restriction, and cognitive restructuring to modify sleep-related behaviors and thoughts. Additionally, some individuals explore alternative therapies, including complementary and alternative medicine (CAM), based on beliefs in their active role in promoting overall health.<sup>7</sup>

**Diagnostic and Statistical Manual for Mental Disorders (DSM-IV) diagnostic criteria for primary insomnia:** Studies examining the prevalence of insomnia in the general population have reported high rates, but few have applied diagnostic criteria from established

classification systems. Consequently, it has been challenging to determine if individuals experienced insomnia as a sleep disorder or as a symptom of a mental disorder. To investigate this relationship, researchers used DSM-IV criteria. They found that an insomnia complaint required individuals to report difficulty initiating or maintaining sleep, early morning awakening without the ability to resume sleep, or non-restorative sleep despite sufficient sleep duration. They also needed to express dissatisfaction with their sleep or take sleep-enhancing medication. The DSM-IV does not allow for multiple insomnia diagnoses, although multiple factors may contribute to the development or persistence of insomnia disorders. For instance, individuals with insomnia related to another mental disorder may also have a physical condition, such as back pain, which can worsen their insomnia. In such cases, the associated physical condition is to be specified separately.<sup>8</sup>

#### FLOW CHART ON DSM-IV DIAGNOSTIC CRITERION FOR PRIMARY INSOMNIA<sup>(9)</sup>



**Etiology:** Although the causes of insomnia are many, they may be summed up as follows: jet lag, changing shifts at work, and any alterations to the body's internal clock. Environmental changes, such as a loud, hot, or chilly room or an uncomfortable bed, are among the other factors. It's also thought that insomnia is a problem that mostly affects those who don't

receive much intense activity in their everyday routine. Having a disturbed sleep due to night terrors or recurrent bad dreams can also lead to chronic insomnia. Those who use recreational substances like cocaine or ecstasy frequently experience sleep disturbances<sup>10</sup>. Stress or mental health conditions such as schizophrenia, bipolar disorder, depression, or anxiety. Periodic limb movements and restless legs syndrome. an over active thyroid, Chronic discomfort, gastrointestinal reflux illness, sleep apnea, and chronic obstructive pulmonary disease, chronic pain, Panic attacks, post-traumatic stress disorders, Circadian rhythm disorders. Natural transition like menopause, Alzheimer's disease, Parkinson's disease and rare genetic disorder, fatal familial insomnia<sup>11</sup>

### **Patient education for patients suffering from chronic insomnia:**

**Sleep Education:** Sleep education forms the cornerstone of effective insomnia management, involving collaborative efforts with healthcare providers or therapists. The objective is to gain a comprehensive understanding of the intricacies of sleep and how insomnia can manifest and persist over time. Through tailored guidance, individuals can develop insights into the factors influencing their sleep patterns, facilitating informed decisions in addressing sleep-related challenges.<sup>12</sup>

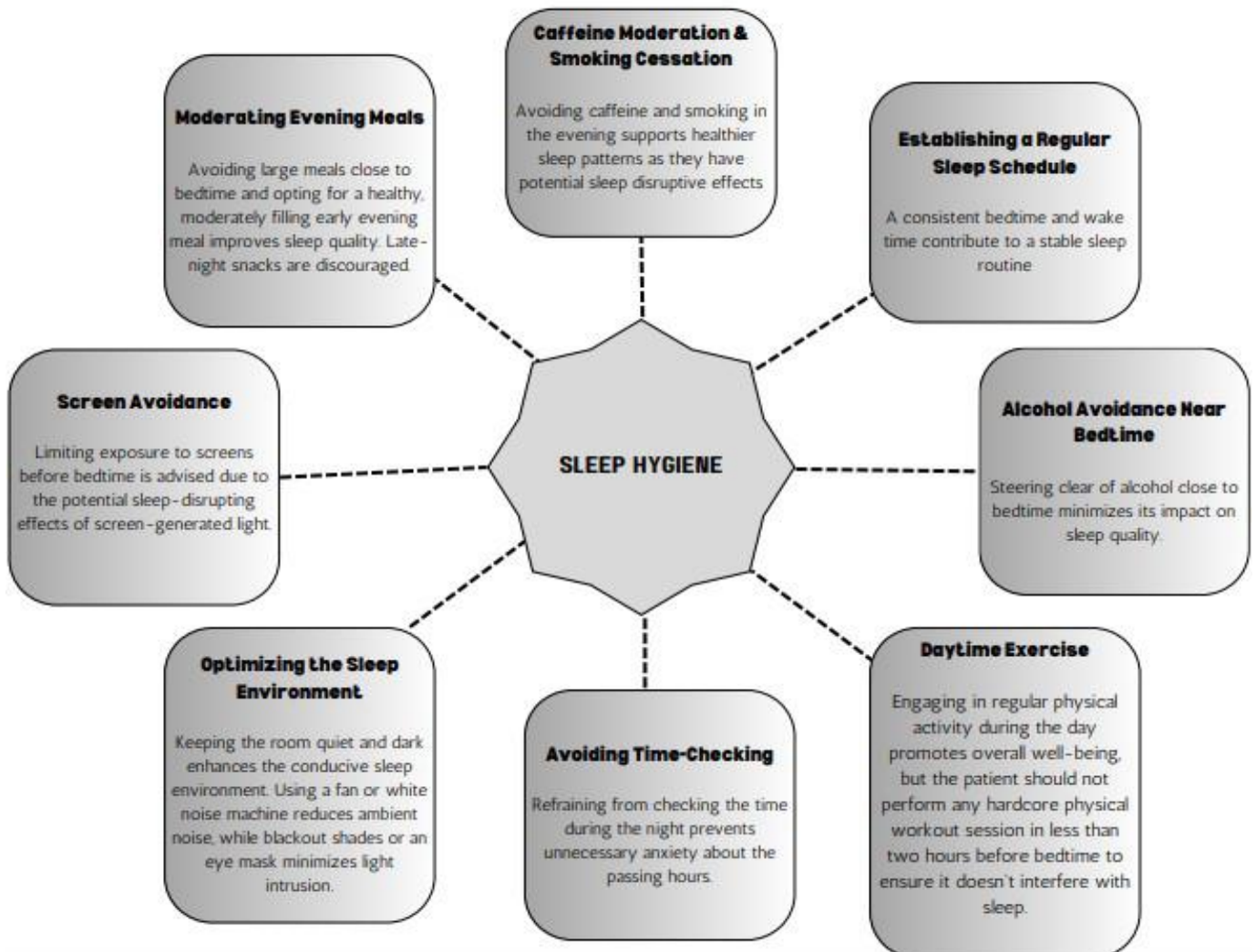
### **Sleep Restriction or Sleep Compression:**

**Sleep Restriction:** This approach underscores the meticulous tracking of the time spent in bed, differentiating between actual sleep and wakefulness. The cycle of insomnia often begins with attempts to compensate for lost sleep by prolonged time in bed, leading to increased difficulty falling asleep subsequently. Emphasizing the importance of aligning time in bed with actual sleep needs, sleep restriction offers a targeted strategy to break the cycle of insomnia.<sup>13</sup>

**Sleep Compression:** Parallel to sleep restriction, sleep compression adopts a similar methodology. It entails maintaining a detailed sleep diary, establishing a consistent bedtime and wake time, and gradually reducing the time spent in bed. This gradual adjustment is particularly beneficial for individuals for whom strict sleep restriction might be medically or psychiatrically contraindicated, offering a nuanced alternative to reclaiming healthy sleep habits. The gradual nature of sleep compression ensures a gentler transition, accommodating those who may find a more abrupt approach challenging.<sup>12</sup>

**Stimulus Control:** Stimulus control therapy acknowledges the psychological associations individuals may form between their bedroom, bed, and wakefulness. By addressing specific behaviors and thought patterns, this therapeutic approach seeks to reshape the environment to be more conducive to sleep. Practical solutions include going to bed only when genuinely sleepy, reserving the bed and bedroom exclusively for sleep, and adopting specific actions if sleep proves elusive within about 20 minutes. Such actions may involve moving to another room to engage in a relaxing activity until sleepiness returns. Additionally, activities that "reward" staying awake, such as eating, balancing checkbooks, doing housework, watching TV, or studying for a test, are discouraged. Daytime napping is also discouraged, while maintaining a consistent wake-up time reinforces the effectiveness of stimulus control therapy.<sup>13</sup>

**Sleep Hygiene:** Sleep hygiene, a critical aspect of insomnia management, focuses on cultivating healthy daytime and evening habits conducive to quality sleep. These encompass<sup>14,15</sup>:



**Treatment:** Conventional approaches for the treatment of chronic insomnia usually involve either pharmacotherapies or psychological interventions (non-pharmacological). Pharmaceutical hypnotics are the primary first-line pharmacotherapy used to treat chronic insomnia.<sup>16</sup> The use of benzodiazepines such as diazepam and related drugs, or non-benzodiazepine hypnotics e.g., zolpidem or zopiclone are preferred currently over older barbiturates which can cause death in cases of overdose.<sup>17</sup> With respect to benzodiazepines, although a relatively safe class of medication, concerns exist over dependency, and currently most guidelines endorse only short-term use for insomnia. Sedating antipsychotics, such as clozapine, zotepine, and paliperidone LAI (somnia), and sedating antidepressants, including the older tricyclic drugs, are also commonly prescribed 'off label' for chronic insomnia, particularly in later life. The use of these drugs has the potential to cause serious adverse effects.<sup>18</sup>

**Cognitive Therapy:** Cognitive therapy delves into the cognitive and emotional aspects of insomnia. Individuals awake at night often harbor concerns about impaired performance the following day or anticipate negative repercussions from inadequate sleep. This cognitive struggle contributes to a cycle where anxiety about sleeplessness makes it more challenging to achieve restful sleep. Blaming negative events on poor sleep further perpetuates this cycle. Cognitive therapy seeks to disrupt this pattern by identifying and challenging negative thought patterns, promoting a positive mindset, and reducing anxiety associated with sleep. By reshaping cognitive responses, individuals can foster a healthier relationship with sleep and alleviate the emotional burden associated with insomnia.<sup>19</sup>

**Relaxation Exercises:** Relaxation exercises play a pivotal role in combating insomnia and promoting overall well-being. Key approaches include:

**Progressive Muscle Relaxation (PMR):** A systematic method involves sequentially releasing tension from different muscle groups. Starting from the face and progressing down to the feet, individuals contract and then relax each muscle group, promoting physical relaxation.

**Diaphragmatic Breathing:** A deep breathing technique encourages relaxation and stress reduction. Detailed instructions guide individuals in mastering this technique, fostering a calm and tranquil state conducive to restful sleep.

**Mindfulness:** Rooted in being present in the moment, mindfulness involves heightened awareness of physical sensations, thoughts, and emotions. Many find this practice to be not only relaxing but also beneficial for improving sleep quality. By cultivating mindfulness, individuals can develop a deeper connection with their internal state, mitigating stressors that may contribute to insomnia.<sup>20,21</sup>

Acupuncture and acupressure appear to provide potential options for the treatment of insomnia, perhaps due to neurochemical modulatory activity involving serotonin, dopamine and endogenous opioids.<sup>22</sup> Valerian was the most studied soporific herbal medicine, reflecting its rich folkloric tradition of use in conditions of restlessness, hysteria, nervous headache and mental depression via its active constituent's valeranal, isovalerianic acid and valerenic acid.<sup>23</sup>

**Discussions:** The recognition, diagnosis, and treatment of insomnia encounter numerous barriers, impeding the delivery of appropriate care despite its widespread prevalence and its association with various adverse personal and socioeconomic consequences.<sup>7</sup> While pharmacologic therapies have traditionally been a primary focus, recent attention to

behavioural therapies has unveiled their efficacy, often proving at least as effective as pharmaceutical alternatives. Furthermore, behavioural therapies exhibit a notable advantage – their efficacy tends to endure beyond the cessation of treatment, emphasizing their potential for lasting impact. When addressing patients complaining of insomnia, it is recommended to offer behavioural therapies as a standalone option or in conjunction with pharmacologic approaches.

In the landscape of insomnia management, the last two decades have witnessed significant strides in behavioural interventions. Remarkably, studies indicate that between 70% and 80% of insomnia patients derive benefits from treatment, showcasing the potential of these therapeutic approaches.<sup>24</sup> Furthermore, approximately half of the treated individuals achieve clinically significant outcomes, and about one-third transition into the category of good sleepers. However, it is crucial to acknowledge that despite these positive trends, there remains considerable variability in the magnitude of treatment response.<sup>13</sup> While a majority of patients do experience improvements, not all reach the coveted status of being considered good sleepers.

Moreover, the intricacies of insomnia treatment extend beyond mere percentages and outcomes. An essential consideration is the sustained impact of non-pharmacological interventions on sleep quality. The benefits achieved through these interventions persist over time, providing relief for at least up to six months after the completion of the treatment regimen.<sup>10</sup> This sustained efficacy offers a promising prospect for long-term insomnia management, highlighting the potential for enduring improvements in sleep quality even after the formal conclusion of therapeutic interventions. The multifaceted nature of insomnia demands a nuanced approach to treatment.

Behavioural therapies encompass a range of strategies, including cognitive-behavioural therapy for insomnia (CBT-I), which has garnered substantial empirical support. CBT-I goes beyond the conventional focus on sleep hygiene and aims to address the underlying cognitive and behavioural patterns contributing to insomnia. This comprehensive approach includes components such as cognitive restructuring, stimulus control, sleep restriction, and relaxation techniques.<sup>19</sup>

Cognitive restructuring involves identifying and challenging maladaptive beliefs and thoughts about sleep, fostering a more positive and realistic perspective. This not only aids in alleviating anxiety related to sleep but also contributes to breaking the cycle of negative thoughts that can perpetuate insomnia. Stimulus control, as a component of CBT-I, targets the association between the bedroom environment and wakefulness. By reinforcing the



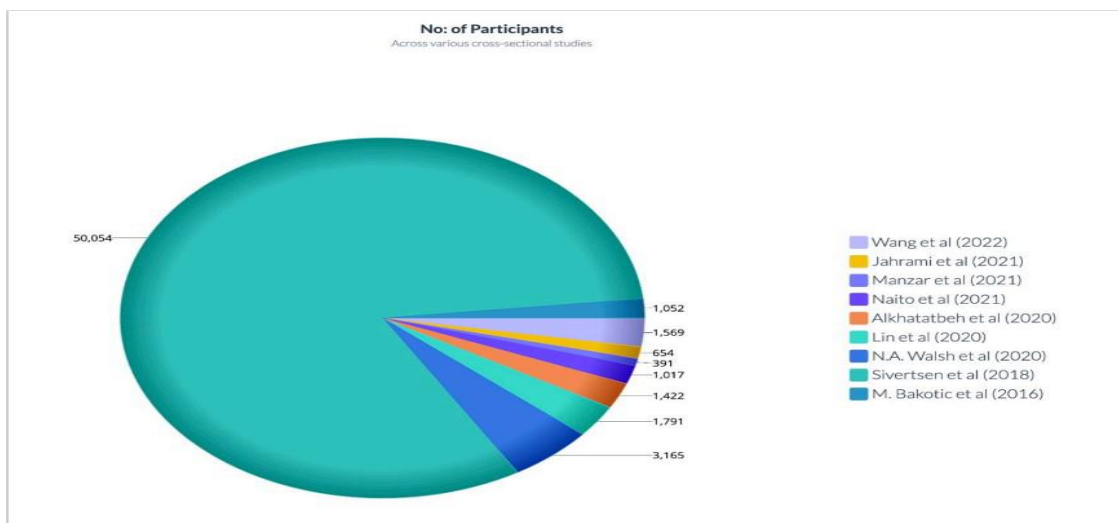
connection between the bed and sleep, stimulus control aims to create a conducive environment for rest.<sup>20</sup>

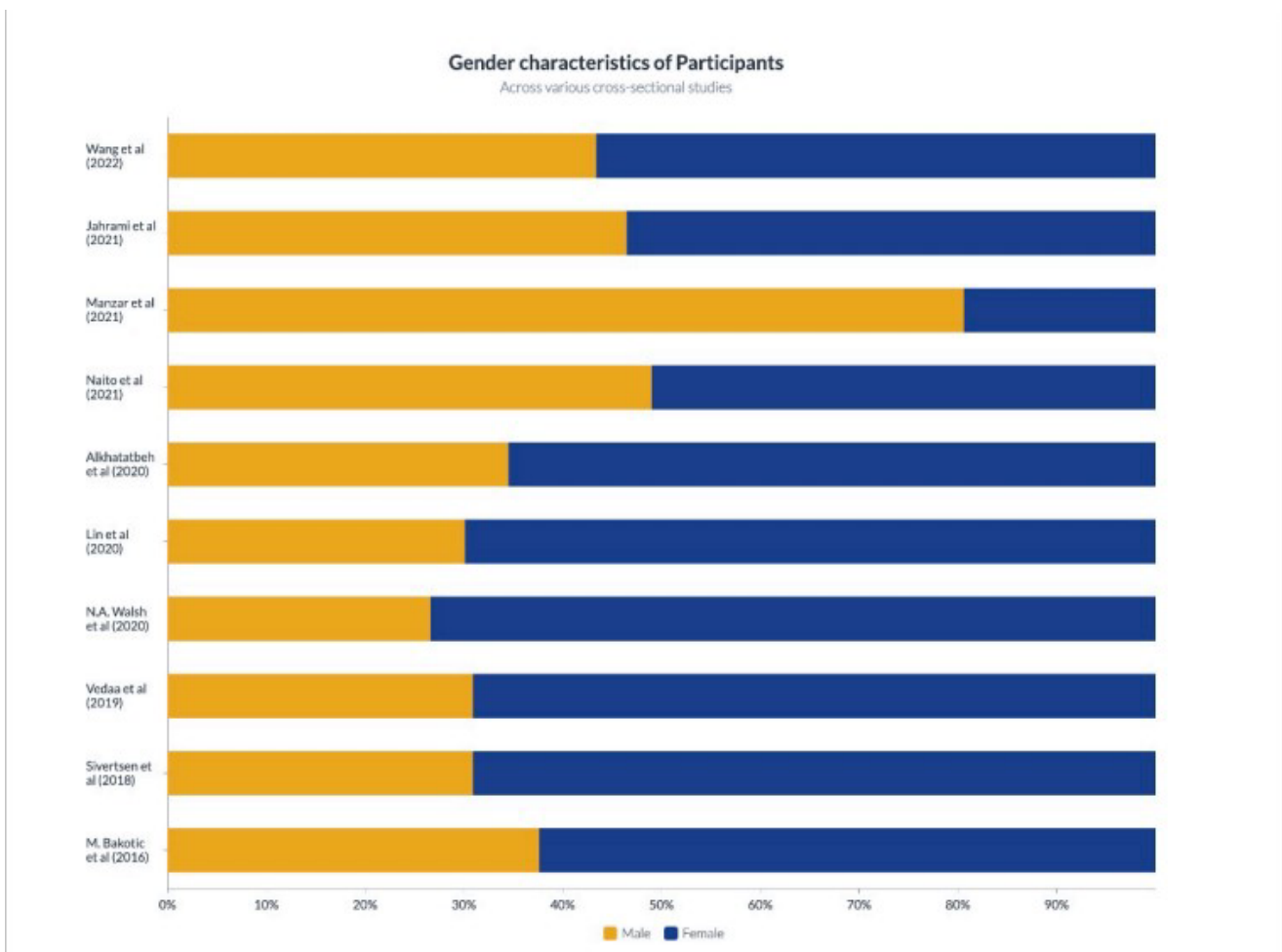
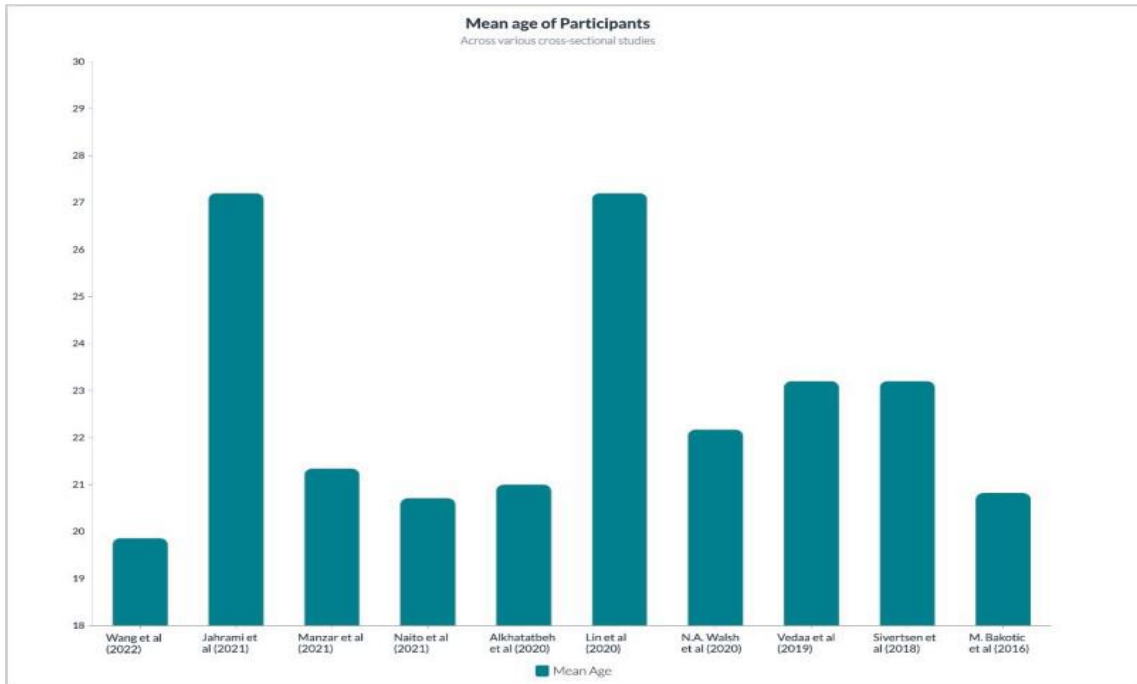
Sleep restriction, another facet of CBT-I, strategically limits the time spent in bed to match actual sleep duration, optimizing the efficiency of time spent in bed for restful sleep. This approach addresses the tendency of individuals with insomnia to extend time in bed in an attempt to compensate for perceived sleep deficits, inadvertently contributing to the perpetuation of sleep difficulties. Integrating relaxation techniques, such as progressive muscle relaxation or guided imagery, further enhances the holistic approach of CBT-I by promoting physical and mental relaxation conducive to sleep<sup>19,20</sup>.

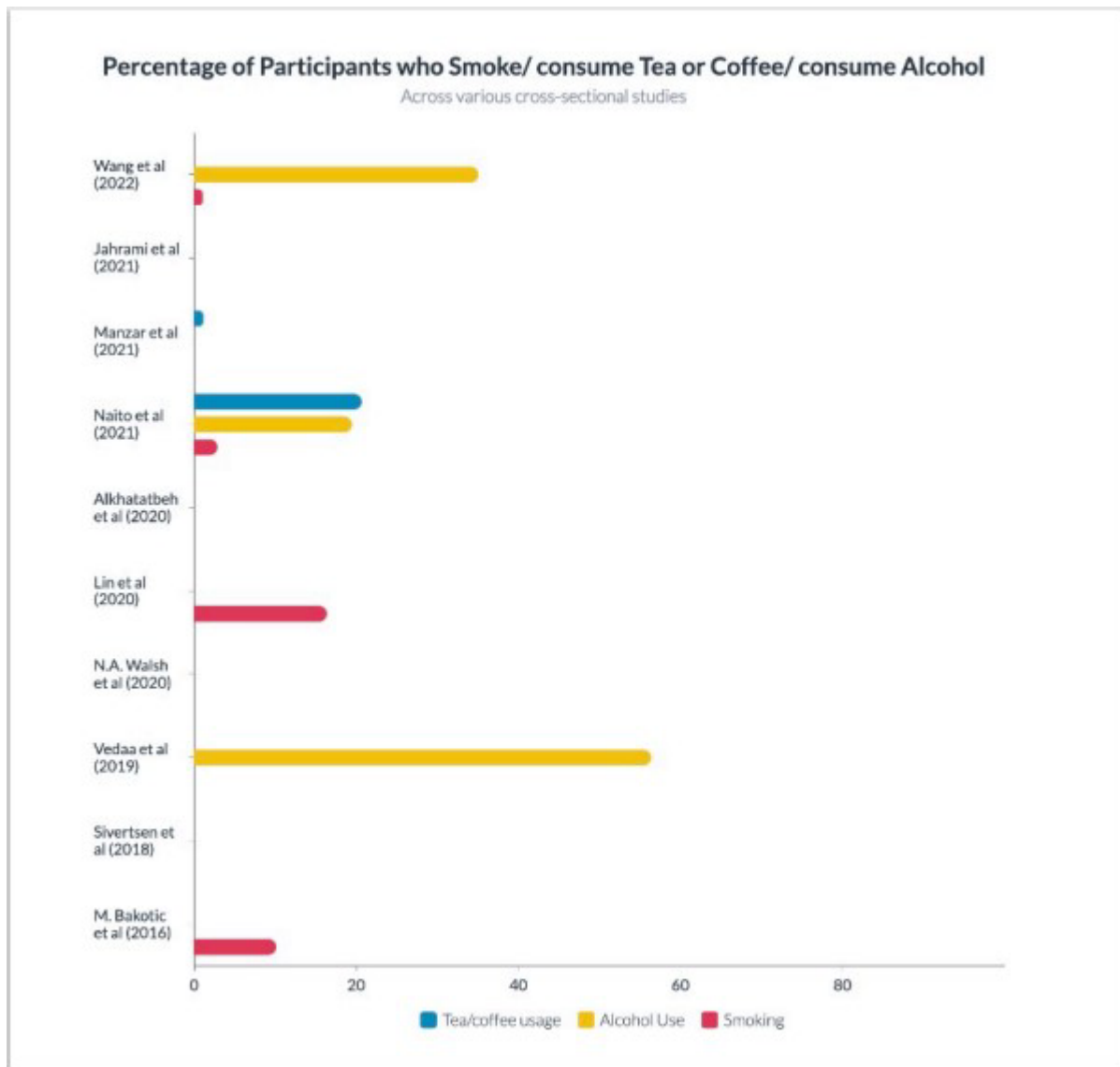
Expanding the scope of treatment options for insomnia to include these behavioural interventions aligns with the recognition that a one-size-fits-all approach may not be suitable. Tailoring interventions to individual needs, considering the diverse causes and manifestations of insomnia, can optimize treatment outcomes. Additionally, incorporating patient preferences and addressing potential barriers to treatment adherence contribute to the overall success of therapeutic interventions.

In examining the broader landscape of insomnia, it becomes apparent that the impact extends beyond the individual level to broader societal implications. The socioeconomic consequences associated with untreated or undertreated insomnia are profound. Reduced work productivity, increased healthcare utilization, and elevated risks of accidents and comorbid conditions underscore the significance of effective insomnia management not only for individual well-being but also for broader public health.<sup>25</sup>

**Comparison of various recent studies:-<sup>26-36</sup>**







**Conclusion:** In summary, the multifaceted nature of insomnia necessitates a holistic approach to its recognition, diagnosis, and treatment. Despite the widespread prevalence and significant personal and socioeconomic consequences associated with insomnia, traditional pharmacologic interventions, while effective for some, come with limitations such as dependency and short-term efficacy. The last two decades have witnessed notable advancements in the realm of behavioural therapies, particularly cognitive-behavioural therapy for insomnia (CBT-I), showcasing its efficacy in treating a majority of insomnia patients. The sustained impact of non-pharmacological interventions, lasting up to six months post-treatment, underscores the potential for long-term insomnia management. This nuanced approach, tailored to individual needs and encompassing cognitive restructuring, stimulus control, sleep restriction, and relaxation techniques, provides enduring improvements in sleep

quality and addresses the complex challenges posed by insomnia. The evolving landscape invites a paradigm shift towards personalized and comprehensive solutions, wherein behavioural therapies play a pivotal role in promoting lasting improvements in sleep quality, thereby enhancing overall well-being.

Moreover, the broader societal implications of untreated or undertreated insomnia highlight the imperative for effective management not only for individual well-being but also for public health. The socioeconomic consequences, including reduced work productivity and increased healthcare utilization, emphasize the need for a diversified approach beyond traditional pharmacologic interventions. Acknowledging the role of behavioural therapies prompts a reconsideration of the conventional emphasis on medications, given their potential for dependence and limited long-term efficacy. As sustainable and holistic paradigms, behavioural interventions offer a promising avenue for insomnia management, addressing root causes and promoting enduring improvements in sleep quality and overall well-being. In conclusion, the intricate challenges posed by insomnia demand a comprehensive and individualized approach, with behavioural therapies emerging as central components in the pursuit of lasting solutions to this pervasive sleep disorder.

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