

ORIGINAL ARTICLE

Mindful Eating for Restorative Sleep: A Community-Based Approach to Sleep Hygiene Improvement

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ABSTRACT

Background: Poor sleep quality is a growing public health concern, with dietary behaviors playing a crucial role in regulating circadian rhythms and overall restfulness. Mindful eating, a practice emphasizing awareness and intentionality in food choices, has shown potential in improving sleep outcomes.

Objective: To explore the perceptions, experiences, and behavioral changes associated with a community-based mindful eating intervention on sleep quality among adults aged 18–45 years.

Methods: A qualitative study was conducted with 35 participants (18 male, 17 female) using in-depth interviews. The intervention included a four-week community program on mindful eating principles, meal timing, and caffeine/sugar reduction strategies. Pre and post-intervention interviews captured behavioral changes, perceived improvements in sleep, and barriers.

Results: Thematic analysis revealed increased awareness of diet-sleep connections, with participants describing reduced sleep onset latency, fewer nocturnal awakenings, and enhanced overall sleep quality. Key themes included shifts toward avoiding late-night sugary foods, reduced pre-sleep anxiety, and greater adherence through community support.

Conclusion: Community-based mindful eating interventions can significantly enhance sleep quality and efficiency. Public health programs should integrate dietary awareness campaigns to address modifiable lifestyle determinants of poor sleep.

KEYWORDS

• Mindful Eating • Sleep Hygiene • Circadian Rhythm • Diet • Public Health

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INTRODUCTION

Sleep disturbances are a widespread concern, linked to impaired cognitive performance, mood dysregulation, and heightened risk of chronic diseases. Dietary behaviors, particularly meal timing, composition, and nighttime sugar or caffeine consumption, have a well-documented influence on sleep architecture (the structure and pattern of sleep cycles) and efficiency (St-Onge *et al.*, 2016; Grandner & Jackson, 2013).

Mindful eating a behavioral approach rooted in mindfulness promotes greater awareness of hunger cues, food quality, and the timing of meals. Established research suggests that mindful eating may contribute to improved digestion, hormonal balance, and circadian regulation, thereby promoting better sleep outcomes (Kristeller & Wolever, 2011; Hülshager *et al.*, 2014).

Despite promising evidence, few community based programs integrate mindful eating into sleep hygiene education. This study aimed to bridge that gap by implementing a targeted intervention to explore its potential in improving sleep quality among adults in a community setting through qualitative insights.

REVIEW OF LITERATURE

Recent studies highlight the intricate relationship between nutrition and sleep regulation. High-glycemic meals consumed before bedtime can delay sleep onset by altering insulin and melatonin pathways (Afaghi *et al.*, 2007). Conversely, balanced diets rich in tryptophan, magnesium, and B vitamins support serotonin and melatonin production, essential for healthy sleep cycles (Peuhkuri *et al.*, 2012). A scoping review on nutrition and sleep quality emphasizes that nutrients like tryptophan-rich foods and antioxidants positively affect sleep, while high-fat diets are associated with disturbances (Alruwaili *et al.*, 2023).

Mindful eating interventions have demonstrated positive effects on both dietary quality and mental well-being. For instance, Mason *et al.* (2016) found improvements in insomnia symptoms following a mindfulness-based eating awareness program. More recent research indicates that intuitive and

mindful eating behaviors are associated with better sleep quality and reduced night eating syndrome symptoms (Ateş *et al.*, 2024). A quasi-experimental study on a mindfulness program in college students showed significant reductions in stress and improvements in sleep quality (Alvarado-García *et al.*, 2025). Public health frameworks increasingly advocate for integrating mindfulness strategies into dietary education to address lifestyle-related sleep problems (Cheung & Cunningham, 2017).

Environmental and cultural factors such as late-night work schedules and traditional meal timing can hinder optimal sleep hygiene practices. Understanding and addressing these barriers is crucial for designing sustainable interventions (Lo *et al.*, 2016; Irish *et al.*, 2015). Recent cross-sectional studies further link intuitive eating to enhanced mental health and sleep quality, highlighting the role of hedonic hunger in poor sleep (Ateş *et al.*, 2024).

METHODOLOGY

Study Design and Approach

This qualitative study employed an in-depth interview approach to explore the perceptions, experiences, and behavioral changes associated with mindful eating as a strategy for improving sleep hygiene. The community-based research design was chosen to capture real-life contexts and cultural influences on eating and sleeping behaviors.

Study Population and Sampling

A total of 35 participants (18 male, 17 female), aged between 18 and 45 years, were recruited from diverse occupational and educational backgrounds, including healthcare, engineering, business, and academic fields. Purposive sampling ensured the inclusion of individuals with varied lifestyles and dietary habits to achieve a wide range of perspectives.

Inclusion and Exclusion Criteria

1. Participants were included if they:
2. Reported experiencing sleep disturbances (defined as difficulty falling asleep or staying asleep at least three nights per week) or irregular sleep patterns for at least three months.
3. We're willing to adopt mindful eating practices for a trial period of four weeks.

4. Individuals with diagnosed sleep disorders requiring medical intervention or those currently on sedative medications were excluded.

Data Collection

Data were collected through semi-structured, in-depth interviews conducted in both face-to-face and virtual formats. Interviews lasted between 30 and 45 minutes, guided by open ended questions on eating patterns, timing of meals, pre-sleep habits, and perceived changes in sleep quality after mindful eating. Interviews were audio-recorded and transcribed verbatim.

Mindful Eating Intervention

Participants were introduced to mindful eating techniques, including:

- Eating slowly without distractions.
- Focusing on flavors, textures, and hunger cues.
- Avoiding heavy or high-sugar foods within two hours before bedtime.
- Maintaining consistent dinner timing.

The intervention period lasted four weeks, consisting of weekly 90-minute workshops led by a certified nutritionist. Follow-up discussions tracked changes in sleep patterns and overall well-being.

Data Analysis

Thematic analysis was performed using Braun and Clarke's six-step framework. Transcripts were read multiple times to identify emerging patterns, which were then coded and organized into thematic categories. Data triangulation involved cross-referencing interview themes with participant journals, and peer debriefing sessions with two independent researchers were conducted to minimize bias and validate findings.

RESULTS

Participant Characteristics

A total of 35 participants (18 male, 17 female), aged between 18 and 45 years, were included in the study. All participants resided in the same community cluster and reported varying degrees of sleep disturbance, primarily related

to poor dietary habits, late-night eating, and irregular mealtimes. Educational backgrounds ranged from secondary school completion to postgraduate degrees, with 57.1% employed and 42.9% students.

Table 1: Participant Demographics (n=35)

Variable	Category	n	%
<i>Gender</i>	Male	18	51.4
	Female	17	48.6
<i>Age Group (years)</i>	18–25	12	34.3
	26–35	10	28.6
	36–45	13	37.1
<i>Employment Status</i>	Employed	20	57.1
	Student	15	42.9
<i>Education Level</i>	Secondary School	5	14.3
	Undergraduate	15	42.9
	Postgraduate	13	37.1
	Professional Degree	2	5.7

Awareness and Practices of Mindful Eating

Prior to the community intervention, few participants reported familiarity with the concept of mindful eating, often associating it simply with “eating slowly” rather than understanding its broader principles, such as food choice awareness, portion control, and sensory engagement during meals. Post-intervention, participants demonstrated improved comprehension, linking mindful eating to overall wellness and describing heightened awareness of how food choices influenced their energy levels and restfulness.

Changes in Dietary Habits

Following the community-based workshops, participants described noticeable shifts in their dietary behavior. Many reported reducing their intake of processed and sugary foods during dinner and shifting their last meal to at least two hours before bedtime. Others incorporated herbal teas or warm milk as part of their evening routine, replacing caffeinated beverages. These changes were often attributed to the intervention's emphasis on intentionality, with participants noting a sense of empowerment in making healthier choices.

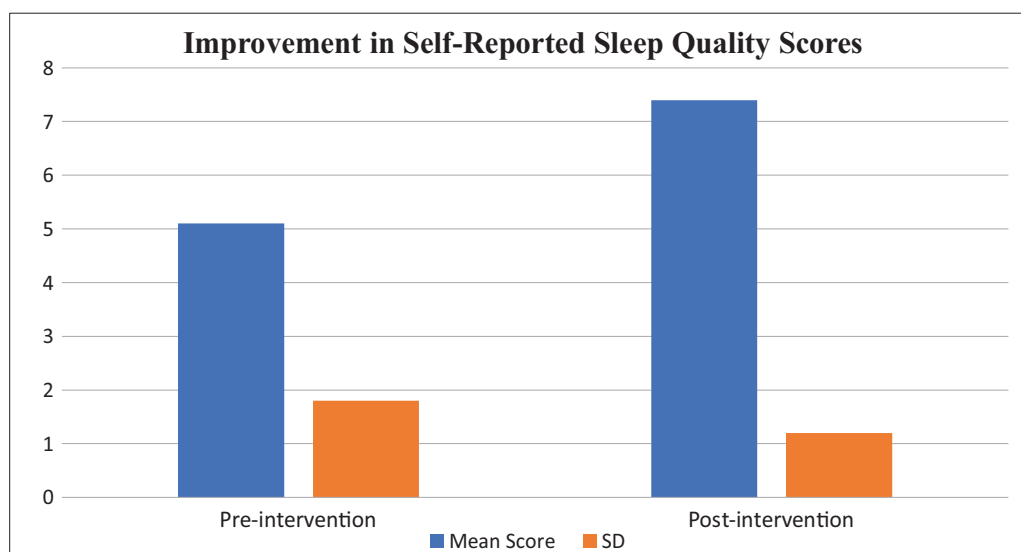
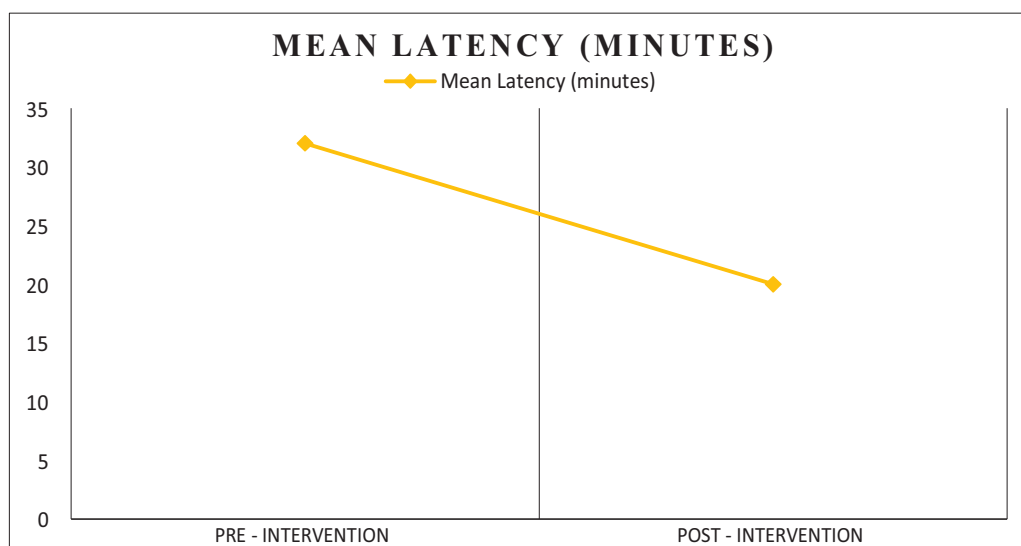
Table 2: Changes in Dietary and Sleep Practices Pre and Post-Intervention

Parameter	Pre-Intervention (%)	Post-Intervention (%)	% Change
Familiarity with mindful eating	28.5	82.8	+54.3
Avoidance of processed/sugary foods at night	34.2	71.4	+37.2
Last meal ≥ 2 hours before bedtime	40.0	65.7	+25.7
Herbal tea/warm milk instead of caffeine	20.0	54.2	+34.2

Impact on Sleep Quality

Participants reported perceived improvements in sleep quality, including shorter time to fall asleep and fewer interruptions during the night. Themes

emerged around feeling “lighter” and “less bloated” before bed, which contributed to easier sleep onset. Many associated avoiding heavy meals late at night with more restful sleep, describing a deeper connection between their dietary habits and sleep patterns.

**Figure 1:** Improvement in Self-Reported Sleep Quality Scores**Figure 2:** Average Change in Sleep Onset Latency

Psychological and Social Outcomes

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Barriers and Challenges

Some participants struggled to maintain mindful eating habits due to work schedules (e.g., shift work in healthcare) or cultural eating patterns involving late dinners (e.g., family meals in extended households). Others cited family habits and lack of availability of healthy evening meal options as limiting factors. These barriers highlight the need for sustained community engagement and supportive environments to maintain behavioral changes.

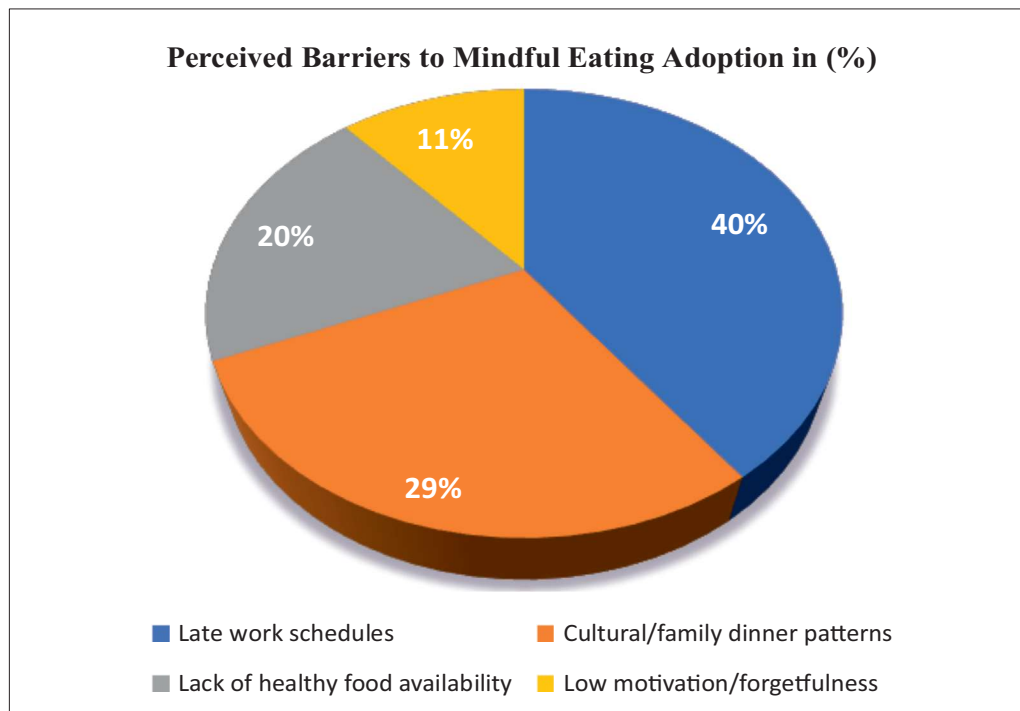


Figure 3: Perceived Barriers to Mindful Eating Adoption

DISCUSSION

The findings indicate that mindful eating interventions can enhance sleep quality, reduce sleep onset latency, and decrease nocturnal awakenings. Participants’ qualitative feedback emphasized heightened awareness of the diet-sleep connection and increased self-efficacy in making healthier food choices. For example, consistent with prior research, reduced sugar and caffeine intake in the evening was linked to improved melatonin regulation (Peuhkuri *et al.*, 2012; Alruwaili *et al.*, 2023). Notably, cultural and occupational barriers persisted, echoing literature on environmental determinants of sleep hygiene (Irish *et al.*, 2015). Recent studies reinforce these links, showing intuitive eating’s positive association

with sleep quality (Ateş *et al.*, 2024).

This study’s community-based approach underscores the feasibility of integrating mindful eating into broader public health sleep improvement strategies.

Limitations

The study relied on self-reported experiences without objective sleep measurements such as actigraphy or polysomnography, which could have provided more precise data. The small sample size (n=35) and single-community setting may limit generalizability. Self-reported data may be subject to recall bias or social desirability, potentially influencing perceived improvements.

Future Implications

Future studies should involve larger, more diverse samples, incorporate objective sleep measures, and examine the long-term sustainability of mindful eating practices. Exploring integration into workplace wellness programs and culturally tailored interventions may enhance effectiveness.

Ethical Considerations

Ethical clearance for the study was obtained from the relevant institutional ethics committee. All participants were provided with information sheets explaining the study's objectives, confidentiality measures, and their rights to withdraw at any stage. Written informed consent was obtained prior to participation. Data were anonymized during transcription to protect participant identity.

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