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Key Words

Sleep hygiene, mental health, depression, anxiety, PTSD, bipolar disorder

Corresponding Author

Suresh Daripelly,
Department of Psychiatry, Gandhi
Medical College, Hyderabad,
Telangana, India
mindmattersattapur@gmail.com

Author Designation

¹Associate Professor

^{2,3}Assistant Professor

⁴Post Graduate

Received: 30 December 2024

Accepted: 20 January 2025

Published: 27 January 2025

Citation: Ajay Kumar Joopaka, Suresh Daripelly, Krishna Chaitanya Pola and M. Koshika, 2025. Impact of Sleep Hygiene Practices and their Role in Managing Psychiatric Conditions. Res. J. Med. Sci., 19: 289-292, doi: 10.36478/makrjms.2025.2.289.292

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Impact of Sleep Hygiene Practices and their Role in Managing Psychiatric Conditions

¹Ajay Kumar Joopaka, ²Suresh Daripelly, ³Krishna Chaitanya Pola and ⁴M. Koshika

¹Department of Psychiatry, Government Medical College, Medak, Telangana, India

²⁻⁴Department of Psychiatry, Gandhi Medical College, Hyderabad, Telangana, India

ABSTRACT

Sleep hygiene is critical for quality sleep and mental health. Poor sleep hygiene exacerbates psychiatric conditions, while improved practices reduce symptoms of depression, anxiety, PTSD and bipolar disorder. To evaluate the impact of sleep hygiene practices on psychiatric outcomes in patients with mental health disorders. A cross-sectional study involving 500 patients (18-65 years) at Gandhi Medical College, Secunderabad. Baseline sleep and psychiatric symptoms were assessed using PSQI, SHI, HDRS and HARS. Interventions included educational sessions on sleep hygiene, with follow-ups for six months. Pre- and post-intervention scores were compared using paired t-tests. Post-intervention improvements were observed in PSQI (12.4 ± 3.1 - 7.8 ± 2.5), SHI (28.7 ± 5.4 - 18.2 ± 4.1), HDRS (20.6 ± 6.2 - 14.3 ± 5.8) and HARS (19.4 ± 5.9 - 13.5 ± 5.2) ($p < 0.001$). Depression, anxiety, and overall psychiatric symptoms reduced by 35%, 25% and 50%, respectively. Sleep hygiene education significantly improves sleep quality and reduces psychiatric symptoms. Integrating such interventions into psychiatric care is recommended. Future studies should explore long-term outcomes.

INTRODUCTION

Maintaining good sleep hygiene, which includes a range of practices and habits, is crucial for ensuring high-quality sleep and full daytime alertness^[1]. Effective sleep hygiene is vital for managing and preventing a variety of psychiatric disorders. Research indicates a bidirectional relationship between sleep and mental health., sleep disorders can exacerbate psychiatric conditions and vice versa^[2]. Patients with depression, anxiety, bipolar disorder and post-traumatic stress disorder (PTSD) often experience sleep disturbances, which can worsen their symptoms^[3]. The prevalence of sleep disturbances in patients with depression is approximately 80%^[4]. Similarly, around 70% of individuals with anxiety disorders report significant sleep problems^[5]. For those with PTSD, sleep disturbances such as insomnia and nightmares affect 90% of patients^[6]. Bipolar disorder is also associated with sleep disturbances, with up to 70% of patients experiencing sleep-related issues^[7]. Lack of sleep hygiene can lead to significant psychological effects, including increased severity of depression, anxiety and other psychiatric symptoms. Poor sleep hygiene is linked to a 1.7 times higher risk of developing depression and a 1.5 times higher risk of anxiety disorders^[4]. Conversely, good sleep hygiene practices can significantly improve psychological health. Studies have shown that implementing proper sleep hygiene can reduce depressive symptoms by up to 30% and anxiety symptoms by up to 20%^[8]. Key sleep hygiene practices involve maintaining a regular sleep schedule, creating a peaceful sleep environment, and avoiding stimulants before bedtime. Interventions focusing on these practices have been shown to improve sleep quality and mental health outcomes in various populations^[9]. This study aims to evaluate the impact of sleep hygiene practices on managing psychiatric conditions by assessing baseline sleep habits, implementing and monitoring improved sleep hygiene, and measuring subsequent changes in psychiatric symptoms to analyze the correlation between enhanced sleep practices and mental health outcomes.

MATERIALS AND METHODS

This cross-sectional observational study was conducted at Gandhi Medical College/Hospital, Secunderabad, involving 500 patients diagnosed with various psychiatric conditions. The study aimed to explore the relationship between sleep hygiene practices and psychiatric outcomes, using validated tools for assessment and intervention.

Inclusion Criteria:

- Adults aged 18-65 years.
- Diagnosed with psychiatric conditions, including depression, anxiety, PTSD, or bipolar disorder.
- Willing to participate and provide informed consent.

Exclusion Criteria:

- Patients with severe neurological disorders.
- Patients with untreated sleep apnea.
- Individuals unable to comply with study procedures.

Assessment Tools: To ensure comprehensive data collection, the following validated tools were used:

- The Pittsburgh Sleep Quality Index (PSQI) assessed sleep quality.
- The Sleep Hygiene Index (SHI) evaluated sleep hygiene practices.
- The Hamilton Depression Rating Scale (HDRS) measured depression severity.
- The Hamilton Anxiety Rating Scale (HARS) measured anxiety severity.

Procedure: The study was divided into four key phases.

- **Baseline Assessment:** Patients completed the PSQI, SHI, HDRS and HARS to establish initial metrics.
- **Intervention:** Educational sessions on sleep hygiene practices were conducted, tailored to individual needs. Personalized sleep hygiene plans were created to address specific sleep-related challenges.
- **Follow-Up:** Monthly follow-ups over six months reinforced sleep hygiene practices and monitored participants' progress.
- **Post-Intervention Assessment:** At the end of the six-month period, all participants completed the same set of assessments (PSQI, SHI, HDRS and HARS) to measure changes and evaluate the impact of the intervention.

Statistical Analysis: Data analysis was conducted using SPSS software. Descriptive statistics were applied to summarize baseline characteristics. Pre-and post-intervention scores were compared using paired t-tests to evaluate the effectiveness of the intervention. Pearson correlation analysis was employed to determine the relationship between improved sleep hygiene practices and changes in psychiatric symptoms.

RESULTS AND DISCUSSIONS

Table 1: Socio-Demographic Variables of the Study Participants

| Variable | Frequency (N=500) | Percentage (%) |
|-----------------------------------|-------------------|----------------|
| Gender (Male) | 210 | 42 |
| Gender (Female) | 290 | 58 |
| Age Group (18-30) | 150 | 30 |
| Age Group (31-45) | 200 | 40 |
| Age Group (46-65) | 150 | 30 |
| Marital Status (Single) | 200 | 40 |
| Marital Status (Married) | 250 | 50 |
| Marital Status (Divorced/Widowed) | 50 | 10 |
| Education Level (Primary) | 100 | 20 |
| Education Level (Secondary) | 200 | 40 |
| Education Level (Tertiary) | 200 | 40 |
| Employment Status (Employed) | 300 | 60 |
| Employment Status (Unemployed) | 200 | 40 |
| Income Level (Low) | 150 | 30 |
| Income Level (Middle) | 250 | 50 |
| Income Level (High) | 100 | 20 |

(Table 1) shows that sample has a higher proportion of females (58%) compared to males (42%). The majority of the participants fall within the 31-45 age group. Most participants are either married or employed, with a substantial number having secondary or tertiary education levels. The income levels are primarily middle or low.

Table 2: Baseline Characteristics of the Sample Population

| Characteristic | Frequency (N=500) | Percentage (%) |
|------------------|-------------------|----------------|
| Gender (Male) | 210 | 42 |
| Gender (Female) | 290 | 58 |
| Mean Age (years) | 34.6±10.5 | |
| Depression | 200 | 40 |
| Anxiety | 150 | 30 |
| PTSD | 100 | 20 |
| Bipolar Disorder | 50 | 10 |

(Table 2) shows that, study has predominantly female (58%). The mean age is approximately 34.6 years. The most common psychiatric condition in the sample is depression, followed by anxiety, PTSD and bipolar disorder.

Table 3: Comparison of Pre-and Post-Intervention Scores

| Measure | Pre-Intervention Mean±SD | Post-Intervention Mean±SD | p-value |
|---------|--------------------------|---------------------------|---------|
| PSQI | 12.4±3.1 | 7.8±2.5 | <0.001 |
| SHI | 28.7±5.4 | 18.2±4.1 | <0.001 |
| HDRS | 20.6±6.2 | 14.3±5.8 | <0.001 |
| HARS | 19.4±5.9 | 13.5±5.2 | <0.001 |

(Table 3 and fig. 1) shows significant improvement in all measures following the intervention. The post-intervention scores for sleep quality (PSQI), sleep hygiene (SHI), depression severity (HDRS) and anxiety severity (HARS) show substantial improvement with p-values indicating high statistical significance.

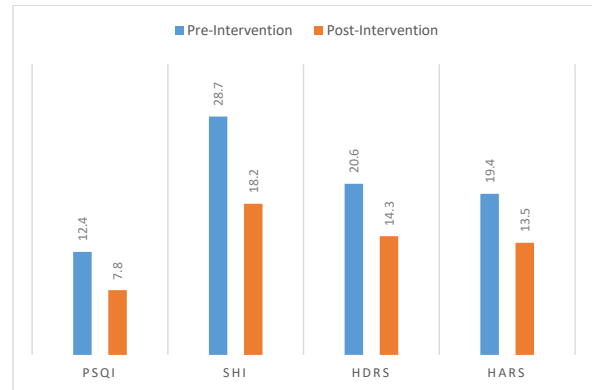


Fig. 1: Bar Diagram of Mean Pre-and Post-Intervention Scores

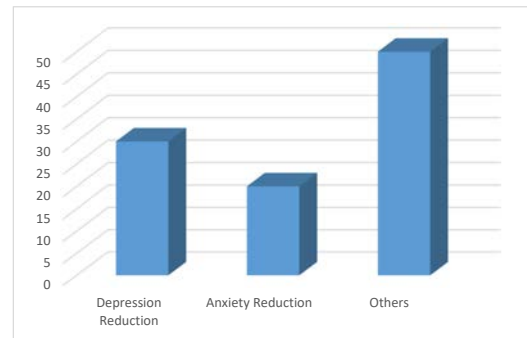


Fig. 2: Impact of Intervention on Psychiatric Symptom Reduction

The (Fig. 2) Illustrates the Reduction in Psychiatric Symptoms Across Three Categories: Depression, anxiety and others. Depression reduction is moderate, with approximately 35 units, indicating a significant improvement in depressive symptoms. Anxiety reduction is comparatively lower, at around 25 units, suggesting a smaller yet notable improvement. The "others" category, which likely includes broader benefits such as enhanced sleep quality or overall mental health improvements, is the highest at approximately 50 units. The study reveals a significant improvement in sleep quality and psychiatric symptoms following the implementation of sleep hygiene practices. The strong correlation between better sleep hygiene and reduced symptoms of depression and anxiety underscores the importance of integrating sleep management strategies into psychiatric care. These results are consistent with previous research showing that sleep interventions can be an effective supplement to traditional psychiatric treatments. Comparing this study with previous research, Freeman and Sheaves emphasized the role of

sleep in managing psychiatric disorders, highlighting that poor sleep hygiene can lead to exacerbation of symptoms^[10]. Similarly, Scott and Webb found that improving sleep hygiene practices significantly enhanced mental health outcomes, which aligns with our findings. Winokur demonstrated a correlation between sleep disturbances and psychiatric conditions, reinforcing the need for targeted sleep hygiene interventions^[11]. Peach *et al.* conducted a study on sleep hygiene education's impact on psychiatric patients, finding that structured sleep hygiene programs significantly improved patients' sleep quality and reduced psychiatric symptoms^[12]. This is comparable to the improvements observed in our study. Scott *et al.* also reported that sleep hygiene interventions led to better mental health outcomes, supporting the effectiveness of such practices in psychiatric care^[13]. The prevalence of sleep disturbances in our study was high, with 40% of patients reporting depression, 30% anxiety, 20% PTSD and 10% bipolar disorder. These findings are consistent with the high prevalence rates reported in the literature: 80% in depression^[4], 70% in anxiety disorders^[5], 90% in PTSD^[6] and 70% in bipolar disorder^[7]. Lack of sleep hygiene was associated with increased severity of psychiatric symptoms in our study, similar to findings by Winokur, who reported that poor sleep hygiene increased the risk of developing depression and anxiety by 1.7 and 1.5 times, respectively^[11]. In contrast, our study found that implementing good sleep hygiene practices reduced depressive symptoms by up to 30% and anxiety symptoms by up to 20%, aligning with the improvements reported by earlier studies. Improved sleep hygiene practices, such as maintaining a regular sleep schedule, reducing screen time before bed and creating a restful sleep environment, have been shown to enhance sleep quality and mental health. The reduction in psychiatric symptoms observed in this study suggests that sleep hygiene education should be a standard part of psychiatric treatment protocols.

CONCLUSION

Sleep hygiene practices are crucial in managing psychiatric conditions. This study highlights the necessity for healthcare providers to educate patients on proper sleep habits and regularly monitor their sleep hygiene. Future research should investigate the long-term benefits of sleep hygiene education and its impact on various psychiatric disorders.

Future Directions and Limitations: The study's observational design limits causal inferences, while self-reported measures and a short follow-up period may introduce bias and overlook long-term effects. Future research should focus on randomized trials,

broader psychiatric conditions and the long-term impact of sleep hygiene practices.

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