

Addressing Sleep Disorders in Respiratory Patients: A Multidisciplinary Approach to Diagnosis, Treatment Adherence, and Mental Health Support

Ohoud M. Albedeiwy¹, Sondos A. Alhaidari², Nouf F. Alanizi³,
Saud N. Alshammery⁴, Shaikha N. Binsunbel⁵, Mona B. Alwallan⁶,
Abdulrahman M. Albaher⁷

Health Affairs at the Ministry of National Guard

Abstract

Background: Sleep-related breathing disorders, such as obstructive sleep apnea (OSA), significantly impact patients with chronic respiratory conditions. Non-adherence to continuous positive airway pressure (CPAP) therapy, along with co-occurring psychological issues, often hinders effective treatment. This study evaluates the impact of a multidisciplinary approach involving respiratory therapists, psychologists, pharmacists, and nurses on CPAP adherence, sleep quality, and psychological outcomes.

Methods: A mixed-methods study was conducted at Tertiary Hospital, involving 150 patients diagnosed with OSA and a chronic respiratory condition. Quantitative data on CPAP adherence, sleep quality (Pittsburgh Sleep Quality Index), and psychological outcomes (HADS, PSS) were collected at baseline, 3 months, and 6 months. Semi-structured interviews with patients and focus groups with healthcare professionals provided qualitative insights.

Results: CPAP adherence increased from 35% at baseline to 75% at 6 months ($p < 0.001$). Sleep quality improved significantly, with PSQI scores decreasing from 14.3 to 6.4 ($p < 0.001$). Anxiety, depression, and perceived stress levels also showed significant reductions ($p < 0.001$). Qualitative data highlighted the benefits of multidisciplinary care, including improved communication, patient education, and mental health support.

Conclusion: A multidisciplinary approach significantly improves CPAP adherence, sleep quality, and psychological outcomes in patients with sleep-related breathing disorders. This model should be integrated into clinical practice to address the complex needs of these patients.

Keywords: sleep-related breathing disorders, obstructive sleep apnea, CPAP adherence, multidisciplinary care, respiratory therapy, mental health, sleep quality

Introduction

Sleep-related breathing disorders, such as obstructive sleep apnea (OSA), are common among patients with chronic respiratory conditions, including chronic obstructive pulmonary disease (COPD) and asthma. These disorders have significant health consequences, ranging from cardiovascular complications to impaired cognitive function, and often lead to reduced quality of life (Young et al., 2002). Untreated sleep disorders

can exacerbate respiratory conditions, leading to frequent hospitalizations, increased healthcare costs, and poor patient outcomes (McNicholas et al., 2007).

The management of sleep-related breathing disorders typically involves continuous positive airway pressure (CPAP) therapy, pharmacological treatments, and lifestyle changes. However, adherence to treatment remains a major challenge, with many patients struggling to use CPAP devices consistently due to discomfort, lack of understanding, or psychological barriers such as anxiety and depression (Weaver & Grunstein, 2008). These psychological factors can further worsen sleep quality and reduce adherence to treatment, creating a cycle of poor outcomes.

Given the complexity of sleep-related breathing disorders and their impact on both physical and mental health, a multidisciplinary approach to care is critical. Respiratory therapists play a key role in monitoring and optimizing the use of CPAP and other respiratory devices. Psychologists provide support for patients struggling with anxiety, depression, or sleep-related cognitive issues, using techniques like cognitive-behavioral therapy for insomnia (CBT-I) to improve mental health and sleep quality (Edinger & Means, 2005). Pharmacists contribute by managing medications, including those for respiratory issues, sleep disorders, and mental health, ensuring safe and effective treatment regimens (Qaseem et al., 2016). Finally, nurses serve as patient educators, helping to improve treatment adherence by providing information on device usage and lifestyle changes (West et al., 2023).

This study aims to explore the impact of a multidisciplinary approach on the diagnosis, treatment adherence, and management of sleep-related breathing disorders in patients with chronic respiratory conditions. By examining the collaboration between respiratory therapists, psychologists, pharmacists, and nurses, we seek to understand how integrated care can improve patient outcomes, particularly in terms of sleep quality and adherence to prescribed therapies.

Literature Review

Sleep-Related Breathing Disorders and Respiratory Health

Sleep-related breathing disorders, particularly obstructive sleep apnea (OSA), are highly prevalent in patients with chronic respiratory conditions such as chronic obstructive pulmonary disease (COPD) and asthma. These disorders are characterized by the partial or complete obstruction of the upper airway during sleep, leading to intermittent hypoxia, fragmented sleep, and increased respiratory effort (Young et al., 2002). Research has shown that OSA and similar conditions exacerbate the symptoms of respiratory diseases, contributing to poorer overall health outcomes, including frequent exacerbations, hospitalizations, and reduced quality of life (McNicholas et al., 2007). Moreover, untreated OSA is associated with an increased risk of cardiovascular diseases, hypertension, and metabolic disorders (Jordan et al., 2014).

The physiological consequences of sleep apnea, such as chronic hypoxia and systemic inflammation, further complicate the management of respiratory conditions. For example, patients with COPD and OSA, often referred to as the “overlap syndrome,” experience a higher rate of morbidity and mortality compared to those with either condition alone (Marin et al., 2010). This underscores the importance of early diagnosis and effective management of sleep-related breathing disorders in patients with chronic respiratory diseases.

Impacts of Sleep Disorders

Sleep-related breathing disorders are closely linked to psychological issues such as anxiety, depression, and cognitive decline. The constant interruption of sleep caused by apneas and hypopneas leads to significant daytime sleepiness, which impairs cognitive function, emotional regulation, and overall mental well-being (Beebe et al., 2003). Studies have found that individuals with untreated sleep apnea are at a higher risk for developing anxiety and depression, which can further worsen sleep quality and reduce adherence to treatment (Van Mill et al., 2010).

Cognitive-behavioral therapy (CBT), particularly CBT for insomnia (CBT-I), has proven to be an effective treatment for sleep-related psychological issues. CBT-I addresses dysfunctional beliefs and behaviors related to sleep, helping patients improve sleep hygiene and manage stressors that contribute to insomnia (Edinger & Means, 2005). This approach, combined with psychological support for anxiety and depression, can significantly improve outcomes for patients with sleep-related breathing disorders. However, despite its effectiveness, psychological interventions are often underutilized in the management of sleep apnea, emphasizing the need for a multidisciplinary approach that integrates mental health care with respiratory therapy.

Pharmacological Interventions in Sleep Disorder Management

Pharmacotherapy plays a significant role in managing both sleep-related breathing disorders and the associated psychological and physical comorbidities. For patients with OSA, the primary treatment is continuous positive airway pressure (CPAP), which mechanically prevents airway obstruction during sleep. However, many patients struggle with CPAP adherence due to discomfort, inconvenience, or psychological factors such as anxiety (Weaver & Grunstein, 2008). In such cases, adjunct pharmacotherapy may be considered to address insomnia, anxiety, or respiratory issues.

Pharmacists are integral in managing these medications, particularly in monitoring for interactions between respiratory drugs, sleep medications, and antidepressants or anxiolytics that may be prescribed for co-occurring mental health conditions (Qaseem et al., 2016). Pharmacists also play a critical role in counseling patients on proper medication use and adherence, helping to mitigate potential side effects that could interfere with sleep or exacerbate respiratory symptoms. Recent studies have shown that pharmacist-led interventions can improve medication adherence and patient outcomes in individuals with sleep-related disorders, especially when combined with other therapies (Lin et al., 2012).

Nursing and Patient Education

Nurses are key players in the management of sleep-related breathing disorders, particularly in the areas of patient education and ongoing care. Nurses often serve as the primary point of contact for patients, providing education on how to use CPAP devices, managing side effects, and offering strategies for improving sleep hygiene (West et al., 2023). Given that non-adherence to CPAP therapy remains one of the biggest barriers to effective treatment, nursing interventions aimed at improving patient education and engagement are critical. Studies have shown that regular follow-up with nurses, including home visits and telephone support, can significantly increase CPAP adherence (Chen et al., 2015).

Additionally, nurses play an important role in monitoring the overall health of patients with sleep-related breathing disorders, assessing both respiratory function and psychological well-being. This holistic approach allows nurses to identify any emerging issues early and refer patients to the appropriate specialists, such as

respiratory therapists, pharmacists, or psychologists, ensuring that the patient's care is coordinated and comprehensive.

Multidisciplinary Approaches to Sleep Disorder Management

The complexity of sleep-related breathing disorders, particularly in patients with co-existing respiratory conditions, calls for a multidisciplinary approach to care. Studies have shown that multidisciplinary teams, which bring together professionals from various specialties—such as respiratory therapists, psychologists, pharmacists, and nurses—can improve outcomes for patients by addressing the full spectrum of physical, psychological, and lifestyle factors that influence sleep (Pelone et al., 2017).

In multidisciplinary settings, respiratory therapists focus on optimizing the use of CPAP devices and other respiratory support tools, while psychologists address the mental health challenges that often accompany sleep disorders, such as anxiety, depression, and insomnia. Pharmacists ensure that medications are appropriately managed, and nurses provide education and ongoing support. This collaborative approach not only improves treatment adherence but also enhances patient satisfaction and quality of life (Bradley & Floras, 2009).

Despite the growing evidence supporting multidisciplinary care for sleep-related breathing disorders, barriers remain, including logistical challenges in coordinating care across multiple specialties and the need for better integration of mental health services into sleep disorder management. Further research is needed to explore the long-term benefits of multidisciplinary interventions and how they can be effectively implemented in various healthcare settings.

Methodology

Study Design

This study utilized a mixed-methods design to evaluate the impact of a multidisciplinary approach on managing sleep-related breathing disorders in patients with chronic respiratory conditions. The study combined quantitative data collection, including sleep quality and treatment adherence, with qualitative insights from patient interviews and healthcare provider focus groups. The study was conducted over a 12-month period at Tertiary Hospital, which specializes in the management of respiratory and sleep-related disorders.

Participants

Patients

A total of 150 adult patients were recruited from the respiratory and sleep clinics at Tertiary Hospital. All participants had been diagnosed with a sleep-related breathing disorder, such as obstructive sleep apnea (OSA), confirmed by polysomnography, and had a co-existing chronic respiratory condition (e.g., COPD or asthma).

- Inclusion Criteria:

- Adults aged 18–75 years.
- Diagnosis of sleep-related breathing disorder, such as OSA, with confirmed polysomnography results.
- Concurrent chronic respiratory condition (e.g., COPD, asthma).
- Willingness to participate in a multidisciplinary care program.

- Exclusion Criteria:

- Severe psychiatric disorders (e.g., schizophrenia, severe bipolar disorder).
- Inability to provide informed consent.
- Contraindications to CPAP therapy or refusal of treatment.

Healthcare Professionals

The multidisciplinary team involved in the intervention included:

- Respiratory Therapists: Responsible for CPAP titration, device management, and patient training on using CPAP devices.
- Psychologists: Provided cognitive-behavioral therapy for insomnia (CBT-I) and psychological support for patients experiencing anxiety or depression.
- Pharmacists: Managed medications related to respiratory conditions, anxiety, depression, and sleep, ensuring safe and effective use.
- Nurses: Educated patients about treatment adherence, sleep hygiene, and lifestyle modifications. Nurses also coordinated patient follow-up and care between specialties.

Intervention

Patients received a multidisciplinary intervention aimed at improving the management of their sleep-related breathing disorders. The intervention lasted for six months and involved the following components:

1. Respiratory Therapy: Respiratory therapists provided CPAP setup, monitoring, and education. Patients underwent CPAP titration to determine optimal pressure settings. The respiratory therapist followed up regularly to assess CPAP usage and troubleshoot any issues.
2. Psychological Support: Psychologists conducted weekly sessions of cognitive-behavioral therapy for insomnia (CBT-I) for patients struggling with sleep-related anxiety or insomnia. Additional psychological support was provided for patients experiencing depression or anxiety, using evidence-based interventions such as mindfulness training and CBT.
3. Pharmacological Management: Pharmacists reviewed and optimized each patient's medication regimen. For patients using respiratory medications (e.g., bronchodilators or corticosteroids), the pharmacist ensured that medications did not interfere with sleep. They also monitored medications prescribed for anxiety, depression, and sleep disorders to ensure safe use and manage any side effects.
4. Nursing Care and Education: Nurses provided ongoing education on CPAP usage, lifestyle changes (e.g., weight loss, sleep hygiene), and dietary advice. Nurses also conducted follow-up visits (both in-person and via telehealth) to monitor adherence to CPAP therapy and other prescribed treatments.

Data Collection

Quantitative Data

1. CPAP Adherence: Adherence to CPAP therapy was objectively measured through CPAP usage data, which recorded the number of hours per night that patients used the device. Adherence was defined as CPAP usage of at least 4 hours per night on 70% of nights, consistent with the American Academy of Sleep Medicine guidelines.

2. **Sleep Quality:** Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), a validated questionnaire that measures subjective sleep quality. The PSQI was administered at baseline, 3 months, and 6 months.

3. **Psychological Outcomes:** Anxiety and depression were measured using the Hospital Anxiety and Depression Scale (HADS), while perceived stress was assessed using the Perceived Stress Scale (PSS). These tools were administered at the same intervals as the PSQI.

Qualitative Data

1. **Patient Interviews:** Semi-structured interviews were conducted with a subset of 30 patients who completed the intervention. Interviews focused on their experiences with the multidisciplinary care approach, their perceptions of the support they received, and the impact on their adherence to treatment and quality of life.

2. **Healthcare Provider Focus Groups:** Two focus groups were conducted with the multidisciplinary team members (respiratory therapists, psychologists, pharmacists, and nurses). The focus groups explored the challenges and benefits of working in a multidisciplinary team, the integration of different treatment modalities, and the team's perspectives on patient outcomes.

Data Analysis

Quantitative Analysis

- **CPAP Adherence and Sleep Quality:** Descriptive statistics were used to summarize CPAP adherence rates and PSQI scores at baseline, 3 months, and 6 months. Changes in sleep quality and CPAP adherence over time were analyzed using repeated measures ANOVA to assess the effectiveness of the intervention. Correlation analysis was performed to examine the relationship between psychological outcomes (e.g., HADS scores) and CPAP adherence.

- **Psychological Outcomes:** Changes in anxiety, depression, and perceived stress were analyzed using paired t-tests and ANOVA. Regression models were used to explore the potential impact of psychological support on sleep quality and adherence.

Qualitative Analysis

- **Thematic Analysis:** Interview and focus group transcripts were analyzed using thematic analysis. Two independent researchers coded the data to identify recurring themes related to patient experiences, the perceived benefits of multidisciplinary care, and challenges faced by healthcare providers. Key themes were discussed and finalized through consensus.

- **Trustworthiness:** To ensure the credibility of the qualitative data, member checking was conducted by sharing the interview findings with participants to verify accuracy. Triangulation was used by comparing findings from patient interviews with the perspectives shared in healthcare provider focus groups.

Ethical Considerations

Ethical approval for this study was obtained from the Ethics Committee. All participants provided written informed consent before their involvement in the study. Patients were informed that participation was voluntary, and they had the right to withdraw from the study at any time without any consequences to their

care. All data were anonymized to protect patient confidentiality, and secure methods were used to store both quantitative and qualitative data.

Limitations

There were several limitations in the study. First, it was conducted in a single tertiary hospital, which may limit the generalizability of the findings to other healthcare settings. Second, while CPAP adherence was objectively measured, sleep quality and psychological outcomes were self-reported, which may introduce bias. Lastly, the follow-up period of six months may not capture long-term adherence trends, and further research is needed to assess the sustained impact of multidisciplinary care.

Findings

Quantitative Findings

The quantitative data focused on changes in CPAP adherence, sleep quality, and psychological outcomes for patients who received multidisciplinary care over six months. The results are summarized in the tables below.

Table 1: Changes in CPAP Adherence

Time Point	Mean CPAP Usage (hours/night)	Adherence Rate (% of patients meeting adherence criteria)
Baseline	2.8 (1.2)	35%
3 Months	4.9 (1.4)	62%
6 Months	5.6 (1.2)	75%
P-Value (Baseline vs. 6 Months)	< 0.001	< 0.001

P-value < 0.05 indicates statistical significance.

Table 2: Changes in Sleep Quality (PSQI Scores)

Time Point	Mean PSQI Score (SD)	P-Value (Baseline vs. 6 Months)
Baseline	14.3 (3.8)	
3 Months	9.8 (3.1)	
6 Months	6.4 (2.7)	< 0.001

Table 3: Changes in Psychological Outcomes (HADS and PSS Scores)

Psychological Measure	Baseline Mean (SD)	3-Month Mean (SD)	6-Month Mean (SD)	P-Value (Baseline vs. 6-Month)
HADS Anxiety	14.5 (3.4)	10.8 (3.0)	7.9 (2.6)	< 0.001
HADS Depression	13.8 (3.2)	9.5 (3.1)	6.8 (2.9)	< 0.001
Perceived Stress	28.6 (5.2)	22.7 (4.8)	17.4 (4.3)	< 0.001

(PSS)				
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Qualitative Findings

Thematic analysis of patient interviews and focus groups with healthcare providers identified several key themes regarding the multidisciplinary approach to managing sleep-related breathing disorders.

Theme 1: Enhanced Treatment Adherence through Multidisciplinary Support

Sub-theme 1.1: Respiratory Therapy as a Foundation for Adherence

Patients emphasized the importance of respiratory therapists in providing personalized support for CPAP usage. Many noted that regular follow-ups with the respiratory therapist helped them overcome initial discomfort with CPAP, leading to improved adherence.

- Participant 12 (Patient):

“At first, I found it really hard to use the CPAP machine. It was uncomfortable, and I didn’t think I could do it. But the respiratory therapist kept working with me, adjusting the settings and showing me how to make it work. Now, I use it every night.”

Sub-theme 1.2: Psychologist-Led Mental Health Interventions Improved Motivation

Patients reported that addressing underlying mental health issues, such as anxiety and insomnia, through psychological counseling played a critical role in helping them adhere to their treatment. Cognitive-behavioral therapy for insomnia (CBT-I) was particularly beneficial in reducing sleep-related anxiety.

- Participant 6 (Patient):

“I was so anxious about using the machine that I couldn’t sleep at all, but the therapy sessions helped me get past the anxiety. Now, I feel more in control, and I’m using the CPAP regularly.”

Theme 2: Holistic Care Enhances Patient Experience

Sub-theme 2.1: Collaborative Communication Between Healthcare Providers

Healthcare providers emphasized that regular communication between the multidisciplinary team members improved the coordination of care. Respiratory therapists, psychologists, pharmacists, and nurses shared updates on patient progress, allowing for a more tailored approach to treatment.

- Participant 3 (Nurse):

“We would meet weekly to discuss the patients’ progress, especially the ones struggling with adherence or anxiety. Knowing what the psychologist or pharmacist had observed helped us refine the care plan for each patient.”

Sub-theme 2.2: Nurses' Role in Patient Education and Follow-Up

Patients appreciated the ongoing education and follow-up provided by nurses, who helped reinforce the importance of treatment adherence and made adjustments as needed.

- Participant 18 (Patient):

“The nurse explained everything so clearly—how the machine worked, why it was important, and how it would help me feel better. I wouldn’t have stuck with it without her encouragement.”

Theme 3: Improved Quality of Life

Sub-theme 3.1: Mental Health and Sleep Quality Improvements

Patients reported that their overall quality of life improved significantly as a result of both better sleep quality and reduced anxiety or depression. Many described feeling more rested, alert, and capable of managing daily tasks.

- Participant 7 (Patient):

“I used to feel exhausted all the time, even after a full night’s sleep. Since I started using the CPAP and seeing the psychologist, I’m sleeping better and feel more like myself during the day.”

Sub-theme 3.2: Pharmacological Adjustments Helped Manage Symptoms

Pharmacists’ involvement in managing medications for both respiratory issues and sleep-related symptoms contributed to improvements in patients’ ability to manage side effects and optimize their treatment.

- Participant 9 (Pharmacist):

“For some patients, the medications they were on for their respiratory conditions were impacting their sleep. We were able to adjust their regimen to reduce side effects, which made a big difference in their adherence to CPAP and overall sleep quality.”

Discussion

This study investigated the impact of a multidisciplinary approach involving respiratory therapists, psychologists, pharmacists, and nurses on the management of sleep-related breathing disorders in patients with chronic respiratory conditions. The findings demonstrate significant improvements in CPAP adherence, sleep quality, and psychological outcomes, highlighting the value of integrating care across multiple healthcare disciplines. This section will discuss the key findings, their implications for clinical practice, and the challenges encountered during the intervention.

Improved CPAP Adherence

The increase in CPAP adherence from 35% at baseline to 75% at six months is a notable finding. CPAP adherence is a well-recognized challenge in the management of obstructive sleep apnea (OSA), with discomfort, difficulty using the device, and psychological barriers being major obstacles (Weaver & Grunstein, 2008). The results of this study suggest that regular follow-ups and personalized care provided by respiratory therapists were critical in helping patients overcome initial difficulties with CPAP therapy. Adjusting CPAP settings to improve comfort, coupled with continuous patient education, allowed patients to gradually adapt to the treatment.

Moreover, the role of psychological interventions in improving adherence should not be overlooked. Many patients reported anxiety and insomnia as barriers to CPAP use, and addressing these issues through cognitive-behavioral therapy for insomnia (CBT-I) significantly enhanced their ability to use the device. This supports previous research that has found that psychological factors play a significant role in treatment adherence (Edinger & Means, 2005), and that integrating mental health care into respiratory management can enhance patient outcomes.

Significant Improvements in Sleep Quality

The marked improvement in sleep quality, as evidenced by the significant reduction in Pittsburgh Sleep Quality Index (PSQI) scores, aligns with the known benefits of CPAP therapy in treating OSA and related sleep disorders. Poor sleep quality is a hallmark of sleep apnea, often leading to daytime fatigue, cognitive impairment, and reduced quality of life (McNicholas et al., 2007). The reduction in PSQI scores from 14.3

at baseline to 6.4 at six months indicates that patients were experiencing more restorative sleep and fewer sleep disruptions.

The study also highlights the importance of addressing the psychological factors that contribute to poor sleep. Patients receiving psychological support for anxiety and depression reported improved sleep quality, which may have contributed to their improved adherence to CPAP therapy. This reinforces the idea that sleep disorders are multidimensional, with both physiological and psychological components, and that effective treatment requires addressing both aspects (Beebe et al., 2003).

Mental Health Improvements and Their Role in Treatment Success

The significant reductions in anxiety, depression, and perceived stress underscore the value of psychological interventions in managing sleep-related breathing disorders. Patients who received regular psychological counseling, including CBT-I, reported lower levels of anxiety and depression by the end of the intervention. Given the well-documented bidirectional relationship between sleep disorders and mental health conditions (Van Mill et al., 2010), it is not surprising that addressing mental health improved both psychological and sleep-related outcomes.

This finding is particularly relevant for clinical practice, as it emphasizes the need to incorporate mental health care into the standard treatment protocol for patients with sleep-related breathing disorders. Respiratory therapy alone may not be sufficient to achieve optimal outcomes in patients who are also struggling with mental health issues. By providing psychological support, the multidisciplinary approach helped patients manage the emotional and cognitive barriers that could have otherwise hindered their adherence to treatment and overall recovery.

Holistic Care and Patient Satisfaction

The qualitative data from patient interviews and healthcare provider focus groups revealed the value of a holistic, team-based approach to managing sleep-related disorders. Patients expressed high levels of satisfaction with the care they received, citing the comprehensive support from respiratory therapists, psychologists, pharmacists, and nurses as key factors in their treatment success. The collaborative communication between healthcare providers was particularly important, as it allowed the team to address all facets of the patients' conditions in a coordinated manner.

Nurses played a crucial role in providing patient education and ongoing follow-up, which helped reinforce the importance of adherence to both CPAP therapy and other aspects of treatment. This is consistent with previous research showing that education and regular follow-up are critical in maintaining patient engagement and improving treatment outcomes (West et al., 2023).

Challenges and Limitations

While the multidisciplinary approach proved effective, several challenges were noted during the study. Coordinating care between different healthcare professionals required regular communication and scheduling, which was resource-intensive. Ensuring that each patient received consistent and integrated care required a high level of collaboration, which may not be feasible in all healthcare settings, particularly in resource-limited environments.

Additionally, the reliance on self-reported measures for sleep quality and psychological outcomes introduces the possibility of reporting bias. Although CPAP adherence was objectively measured, the subjective nature

of sleep and psychological assessments may have affected the accuracy of the data. Future research should consider incorporating more objective measures, such as actigraphy or neurocognitive testing, to further validate these findings.

Another limitation of the study was the six-month follow-up period, which may not fully capture long-term adherence patterns. While significant improvements were observed during the study, it remains unclear whether these positive outcomes would be sustained over a longer period. Longer-term follow-up studies are needed to determine the durability of the multidisciplinary approach in maintaining CPAP adherence and improving sleep quality.

Implications for Clinical Practice

This study has several important implications for clinical practice. First, it highlights the importance of a multidisciplinary approach in managing sleep-related breathing disorders, particularly in patients with chronic respiratory conditions. Integrating care across respiratory therapy, psychology, pharmacology, and nursing can lead to better patient outcomes by addressing both the physiological and psychological aspects of sleep disorders.

Second, the study demonstrates the critical role of mental health support in improving CPAP adherence and overall treatment success. Healthcare providers should consider routinely screening patients with sleep-related breathing disorders for anxiety and depression and providing appropriate psychological interventions to address these issues.

Finally, the findings suggest that regular follow-up and patient education, particularly through nursing support, are essential in ensuring long-term treatment adherence. Hospitals and healthcare systems should consider implementing structured follow-up programs that include patient education, telehealth check-ins, and multidisciplinary case discussions to maintain adherence and optimize outcomes.

Future Research

Further research is needed to explore the long-term benefits of multidisciplinary care in managing sleep-related breathing disorders. Specifically, studies should focus on whether the improvements in CPAP adherence, sleep quality, and psychological outcomes are sustained beyond the initial six-month intervention period. Additionally, future studies should examine the cost-effectiveness of this approach to determine whether it can be widely implemented in various healthcare settings.

Conclusion

This study demonstrates that a multidisciplinary approach, integrating respiratory therapy, psychological support, pharmacological management, and nursing care, significantly improves CPAP adherence, sleep quality, and mental health outcomes in patients with sleep-related breathing disorders. The findings underscore the importance of addressing both the physical and psychological dimensions of these disorders to optimize treatment success and enhance patients' quality of life.

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