CPAP Nonadherence Issues in a Small Sample of Men with Obstructive Sleep Apnea
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INTRODUCTION

• Obstructive sleep apnea (OSA) is the most common form of sleep-disordered breathing, affecting as many as 10% of middle-aged men in the United States.1
• Continuous positive airway pressure (CPAP) is the gold standard in OSA treatment, however, adherence is poor (30-60%).2
• Nonadherence to CPAP has many health and quality of life implications, including increased risk for:
  o Cardiovascular disease
  o Cerebrovascular issues
  o Metabolic disturbances including diabetes mellitus
  o Vascular and other accidents related to daytime sleepiness
  o Cognitive and psychological problems including permanent neurostructural brain changes.
• These problems place extra burdens (physical and financial) on the healthcare system.
• The theoretical framework for the study was Triandis’ Theory of Interpersonal Behavior7,8 (promoting CPAP as positive habit)

PURPOSE
The purpose of this study was to identify CPAP adherence issues among a small sample of middle-aged and older men.

RESEARCH QUESTIONS
• What are potential barriers to CPAP use?
• What interventions are already in place that promote CPAP adherence?
• What might facilitate CPAP use among this group?

LIMITATIONS
• Sample size was small and narrow in scope
• Sample is not representative of all ethnic and age groups
• Limitations may impact transferability of findings

METHOD
• Study was approved by the University institutional review board and hospital research ethics committee; informed consent was obtained from each participant
• Participants were recruited from medical and home medical supply offices and community contacts; researcher-blinded mailings, flyers, and posters supplemented the recruitment process.
• Inclusion criteria: Male, 40-70 years, able to read and write English, diagnosed with moderate to severe OSA (15 or higher apnea-hypopnea index [AHI]), prescribed CPAP, and reported nonadherence or inconsistent use of CPAP
• Four participants participated in the final study: Two via face-to-face interviews and two via telephone interviews
• Demographics were collected for each participant
• Interview questions:
  o Engagement question: Talk about when first diagnosed
  o Exploration questions: Talk about when first told needed to wear CPAP, what education received and who provided it, first time CPAP applied, barriers face wearing CPAP, and motivators to wearing CPAP more often
  o Exit question: Share other CPAP-use information
• Data analysis:
  o Demographics: SPSS
  o Interviews and field notes: van Manen’s hermeneutic phenomenological reflection with thematic analysis via the selective reading approach
  • Study rigor was enhanced by expert and member checks for credibility, audio-taping and transcribing for auditability, and connecting the findings to theory for applicability

RESULTS

Themes and Validating Participant Quotes

<table>
<thead>
<tr>
<th>Struggles and frustrations</th>
<th>Tired of fighting it – trying to keep my mouth closed; frustrated with issues of the pressure and the mask, full face mask making the bridge of my nose sore; major inconvenience with negligible benefit</th>
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<tbody>
<tr>
<td>The CPAP machine and the masks</td>
<td>It got gunky and I had to clean it all the time; I’m not sure I was so compliant with the hose; the new machine is really compact and easier to travel with; pillows are the most comfortable one I can find</td>
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<tr>
<td>Disruptions in routine and body image</td>
<td>Nighttime is my own time; sometimes I fall asleep on the couch and don’t worry about it; aggravating every night; made me feel like a freak... like frog man; I went into another bedroom to sleep and my wife didn’t like that; like Darth Vader</td>
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<tr>
<td>Impetus for continuing use</td>
<td>Had a commercial driver’s license; not having major organs failing; doctor wanted to put a trach in – that’s how bad it was; heard about a student who died; lost a bet with my wife; tech told me if I don’t wear CPAP I’ll die</td>
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Longoing for alternative treatments

With dental appliance would work; wish I could take a pill or something; surgery may have a 25-30% success rate, but I’d be willing to give that a shot to get relief

• General CPAP issues:
  o All had very limited knowledge when first diagnosed; education was provided by doctor (OSA risks/effects) and respiratory therapist at sleep center and home medical supply (CPAP)
  o All received written materials, two reported handling CPAP equipment and different types of masks, and none reported being shown an airway model or what happens to airway when asleep
  o None had a bed partner/significant other present during teaching
  o Three reported discomfort from the initial pressure, but none had claustrophobia from the mask
  o None would be motivated by home visits, but two thought a support group and motivational counseling by a nurse might be helpful to those newly diagnosed

CONCLUSION AND IMPLICATIONS
• Many negative aspects of CPAP were reported in this study
• Multimodal strategies implemented early and reinforced throughout treatment may be important in promoting CPAP as a positive habit
• Encouraging partner and healthcare provider support, using an airway model and other visual aids, showcasing CPAP machines/masks, discussing pressure tolerance, and implementing motivational strategies are recommended
• Patients may not be aware of their initial and continuing AHI and/or pressure settings; documenting these numbers on a report card may facilitate CPAP adherence by educating the patient, and subsequently motivating the patient to improve his/her numbers