

Social Factors Associated with CPAP Acceptance

Commentary on Simon-Tuval et al. Low Socioeconomic Status is a Risk Factor for CPAP Acceptance Among Adult OSAS Patients Requiring Treatment. *SLEEP* 2009;32:545-552.

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IN THIS ISSUE SIMON-TUVAL AND COLLEAGUES¹ DESCRIBE THE ROLE OF SOCIOECONOMIC STATUS (SES) IN THE UPTAKE OF TREATMENT AMONG PATIENTS with OSA. The investigators conducted a cross-sectional study of consecutive patients offered treatment with CPAP for OSA, and found that SES influenced acceptance of CPAP therapy. The report raises important questions about how we present CPAP to patients from different SES backgrounds.

Simon-Tuval et al. report on 162 consecutive patients with moderate-severe OSA. The investigative team employed a CPAP support system to introduce CPAP and initiate its uptake among patients. The system consisted of full-night polysomnography, an additional titration study, meetings with sleep specialists, education about the pathophysiology of OSA and the benefits of CPAP, encouragement to take part in a 2-week adaptation program and extensive support around choosing the proper device and interface. Patients were told up front that they were likely responsible for the cost of 30% of their CPAP device under the healthcare system most commonly seen in this clinic. Only 40% of those being recommended for CPAP accepted the treatment. Acceptors of CPAP were older, had higher incomes, had more severe apnea, had no bed partner, and were more likely to have heard about positive CPAP experiences from family and friends. These findings were evident even after controlling for key variables (age, BMI, subjective sleepiness, and AHI). The authors conclude that low SES patients are “less receptive to CPAP treatment,” and that programs should be geared toward these individuals.¹

This study is compelling in that it identifies a key factor that might provide insight into the problem of poor adherence to CPAP. SES has been identified as a barrier to diagnosis and treatment in many previous studies outside of the field of sleep.^{2,3} It is usually believed that individuals with lower SES have less access to care.⁴ One strength of this study was that individuals with lower SES were offered free access to diagnosis and titration studies. As such, the reader can appreciate more fully the effect of SES as the range of income is not truncated by limited access to care. It is clear that under circumstances where access to diagnosis is not limited, SES plays a role in the patient's decision of whether or not to pursue treatment. The authors indicate that this could be one reason for the differences

between their findings and those of other studies where initial uptake of CPAP was high.

There are many compelling explanations for the SES findings reported in this study, although none can be addressed by this study alone. It is possible that simple cost of care was too high for individuals with lower SES. Indeed, 29% of patients refusing treatment claimed cost as a factor in making their decision. It could also be that self-management of disease is different among individuals with lower SES. This has been reported in studies of adherence to other medical regimens.⁵ The premise in these studies is that lower SES is an epiphenomenon of less education and that education informs one's approach to their self-management of illnesses. Interestingly, education was not factored into the logistic regression in this study, leaving open the possibility that the shared variance between education and SES could itself be the driving factor for the study findings.

Although these explanations are plausible, there are also other possibilities that this study raises by way of its inclusion of factors such as bed sharing and the influence of family and friends. Perhaps the biggest problem with this article is that the title does not represent what may be the most compelling aspect of the findings, the potential role of social support in adherence. The authors state in their discussion that, “No single factor has been consistently identified as predictive of CPAP acceptance and adherence.” In fact, factors related to a patient's attitudes toward behavior change, (e.g., self-efficacy), have been consistently related to CPAP adherence.⁶⁻⁸ These constructs come directly from sophisticated theories of behavior change including Social Cognitive Theory (SCT). SCT is a learning theory developed by Albert Bandura.⁹ It assumes that individuals learn from modeling, often by those who are influential in their lives. SCT also lays out a set of key constructs that contribute to the acquisition of knowledge, which, in turn influences behavior change. These constructs include outcomes expectancies, social support, and self-efficacy. Some of the very findings in the Simon-Tuval study point toward these constructs as potentially applicable to the acceptance of CPAP among individuals with lower SES.

A positive culture toward medical management can be a defining characteristic of a family or social network. Families who support each other in self-management of disease tend to have better outcomes in other disease states.¹⁰ The findings from the Simon-Tuval study suggest that families and friends influence treatment acceptance. This is an exciting finding and one that has received relatively little attention in the CPAP adherence literature. There are studies of the influence of having a bed partner on CPAP adherence.¹¹ but these studies fall short of as-

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sessing the true influence of a social network. The Simon-Tuval study opens the door to the effects that social networks can have on the treatment of OSA.

Another compelling finding is that 38% of individuals rejecting CPAP indicated that they had significant side effects, and more of them reported having had an unfavorable experience during their titration study. The study does not tell us if those accepting CPAP had equally high rates of side effects, but these findings raise the possibility that the mere interaction between side effects, the cost of treatment, and the influence of the social network could drive much of CPAP non-acceptance.

The study by Simon-Tuval raises questions that require further research. It is likely that the true drivers of CPAP acceptance and adherence are multifactorial. This is not, however, a reason to avoid studying specific contributing factors. The past 10 years of CPAP adherence studies have led investigators to appreciate the unique role of individual differences in the acceptance and utilization of CPAP. This study highlights those findings. Such studies will lead to better, more thoughtful and tailored, approaches to individuals and their specific needs. This study provides evidence, perhaps for the first time, as to how individuals of very low SES approach treatment. Certainly cost of care for individuals of lower SES cannot be ignored. This study tells us, however, that cost of care alone is not the only barrier. Other, perhaps more modifiable factors, like social support, physician recommendation, and education may prove useful targets for intervention to improve the uptake of treatment among this population of patients.

DISCLOSURE STATEMENT

Dr. Aloia is an employee of Philips/Respironics and owns stock shares in the company.

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