

Low socioeconomic status is a risk factor for CPAP acceptance in adult OSAS patients

Continuous positive airway pressure (CPAP) has been the treatment of choice in obstructive sleep apnoea syndrome (OSAS) for 25 years. This study evaluated whether socioeconomic status has a role in OSAS patients' decision to accept CPAP treatment.



Materials and methods

162 consecutive adult OSAS patients from a university-affiliated sleep laboratory in Israel who required CPAP and underwent attendant CPAP titration and a 2-week adaptation were studied. Patients were included if their apnoea/hypopnoea index (AHI) was ≥ 30 or if they had an AHI of 5–30 accompanied by an Epworth Sleepiness Scale score ≥ 10 and/or cardiovascular disease and/or arterial hypertension. Socioeconomic status was evaluated according to individual monthly income. Participants rated their individual monthly income level as below (<20%), equal to ($\pm 20\%$), or above (>20%) the average monthly income level in Israel. A low socioeconomic status was defined as a monthly income below the national average.

Results

40% of patients accepted CPAP. Patients accepting CPAP were older, had higher AHI and income and were more likely to sleep in a separate room than patients declining. Multiple logistic regressions showed CPAP purchase is determined by: each increased income level category, age, AHI, family/friends with positive experience of CPAP and partners sleeping separately. The odds of CPAP purchase for patients in the highest third of income level were 5.76 times as great as those in the lowest third of income level.

Conclusion

Patients with low socioeconomic status are less receptive to CPAP treatment than groups with higher socioeconomic status.

Message

It appears that acceptance of CPAP is dependent on socioeconomic status. CPAP support and patient education programmes should be better tailored for low socioeconomic status people in order to increase patient treatment initiation and adherence.

Competing interests

None declared

Original article

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Editorial comment

CPAP therapy has been the treatment of choice for many years and currently no one factor has been consistently identified as predictive of CPAP acceptance and adherence. This study is compelling in that it identifies a key factor that might provide insight into the problem of poor adherence. It has been shown before that poor health literacy among low socioeconomic status patients is a barrier to treating obesity and managing cardiovascular disease and is associated with greater likelihood of exposure to risk behaviour, including nonattendance at health checkups and poor compliance, resulting in increased morbidity and mortality risk. It is possible that poor compliance with interventions may impair treatment acceptance among low socioeconomic status OSAS patients requiring CPAP. A strength of this study was there was no bias due to limited access to diagnosis and treatment, since Israeli social security offers free access to diagnostic and titration sleep studies. Socioeconomic status does play a role in the patient's decision of whether to purchase CPAP (29% of patients identified cost as a reason for not accepting CPAP). This study clearly illustrates the impact of financial resources on CPAP therapy: for each increase in income category, the odds for CPAP acceptance increased by 140%. Co-payment policy *per se* has also been found to be a barrier to the purchase of essential drugs and medical technologies among low socioeconomic status populations. The data in this study conflict with evidence that CPAP acceptance is low (46–60%) in minority-serving institutions even when medical insurance covers CPAP. This could indicate that cost of care is not the only barrier, and that these patients are less knowledgeable about their disease and treatment options. This opens new perspectives on approaching CPAP initiation for OSAS in these patients, with focus on social support, physician recommendation and education. The study has some weaknesses. First, socioeconomic status was defined in terms of income, while education or professional activity can also be relevant. This aspect was not completely overlooked: data on years of education were reported (significantly lower in the low socioeconomic status patients). Mean number of years of education did not, however, differ significantly between CPAP-declining and -accepting patients. The role of education can, though, not be neglected. Education in general, more than other measures, tends to precede disease. Educational attainment also has cultural aspects, such as tools for understanding and implementing health advice, and is probably more closely related to parental social placement. Secondly, the findings can only be applied to social security systems where patients have substantial co-payment. Thirdly, no attention was paid to whether patients belonged to minorities. Fourthly, CPAP acceptance was unacceptably low, in contrast to other reports demonstrating that when receiving support, acceptance is ~70%. Fifthly, no attention was paid to long-term compliance for CPAP. Studying the association between socioeconomic status and compliance is, however, complex, since socioeconomic status includes several dimensions, and therefore different indicators of socioeconomic status have to be considered. Notably, income can directly reflect material conditions, and housing conditions also reflect factors that could directly affect CPAP compliance, *e.g.* humidity, crowding and indoor pollutants. People in areas of bad housing were found to report more respiratory symptoms. Finally, patients with mild OSAS were included. These patients show a generally low compliance with CPAP, independent of socioeconomic status. Health authorities must be very careful about decreasing funding for CPAP in hard financial times and should develop social support and educational programmes to improve uptake among low socioeconomic status patients.

J. Verbraecken, Antwerp, Belgium