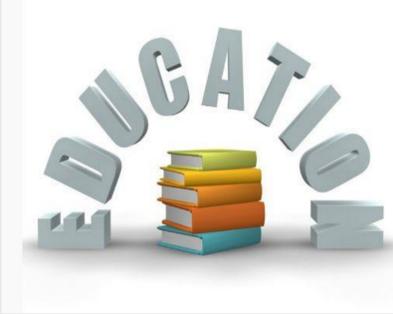




Obstructive Sleep Apnea and Associated Comorbidities: Educating Patients in a Rural Clinic

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Purpose of the Project

To evaluate and synthesize evidence related to the screening, referral, and education of patients with obstructive sleep apnea and associated comorbidities, and propose best practice guidelines in a rural health care clinic.

Problem

Adult patients may be suffering from obstructive sleep apnea, but do not realize it as this condition is often not recognized or diagnosed. The primary care provider in a rural health care clinic can evaluate for risk factors for obstructive sleep apnea and provide referral to a specialist for consult and treatment, including a sleep study, but the patient might be unwilling to travel due to distance and does not follow-up with the specialist.

Patient Population and Setting

Adult patients (18 years and older) presenting to a rural clinic for primary health care with a family nurse practitioner.

Clinical Question

In rural areas, will patients presenting with risk factors for obstructive sleep apnea be more likely to travel for specialist follow-up if provided with written educational materials describing associated comorbidities?

Review of the Literature

- When screening patients with risk factors for obstructive sleep apnea, education can be done about associated comorbidities, as well as testing and treatment options for management.
- Educating the patient can help them to make more informed decisions regarding their health, move forward with testing and treatment, and help to prevent more serious consequences in the future—education can have a positive impact on the outcome of the patient’s health status.
- In a rural setting, referral by the primary care provider to a specialist can be difficult for the patient due to distance and travel required to be seen.
- Printed educational materials should be simple and easy to understand, helping patients to retain information provided at the office visit, improve understanding, and encouraging patients to be involved and responsible in their own care and long-term health.

Case Study

Male patient in his 30’s with diagnosed hypertension, morbid obesity, asthma, and peripheral edema. He was evaluated at a rural health care clinic by a nurse practitioner for obstructive sleep apnea (OSA) risk factors: obesity, alcohol use, and neck circumference greater than 17 inches. Patient education performed verbally and written materials provided on OSA and associated comorbidities. Referral placed and patient followed-up for a sleep study with a specialist in a different city and was subsequently diagnosed with OSA and started on treatment with continuous positive airway pressure (CPAP) at night. Discussed additional positive lifestyle changes (nutrition/exercise), patient will continue to be followed for multiple chronic medical conditions.

References

Adepu, R., & Swamy, M.K. (2012). Development and evaluation of patient information leaflets (PIL) usefulness. *Indian Journal of Pharmaceutical Sciences*, 74(2), 174-178. doi: 10.4103/0250-474x.103857

Carlucci, M., Smith, M., & Corbridge, S.J. (2013). Poor sleep, hazardous breathing. *The Nurse Practitioner*, 38(3), 20-28. doi: 10.1097/01.NPR.0000426409.62476.fa

Goodson, B.L., Wung, S.F., & Archbold, K.H. (2012). Obstructive sleep apnea hypopnea syndrome and metabolic syndrome: A synergistic cardiovascular risk factor. *Journal of the American Academy of Nurse Practitioners*, 24(12), 695-703. doi: 10.1111/j.1745-7599.2012.00771.x

Ho, M.L., & Brass, S.D. (2011). Obstructive sleep apnea. *Neurology International*, 3(3), 60-67. doi: 10.4081/ni.2011.e15

Jordan, A.S., McSharry, D.G., & Malhotra, A. (2014). Adult obstructive sleep apnoea. *Lancet*, 383(9918), 736-747. doi: 10.1016/S0140-6736(13)60734-5

Molnar, M.Z., Mucsi, I., Novak, M., Szabo, Z., Freire, A.X., Huch, K.M.,...Kovesdy, C.P. Association of incident obstructive sleep apnoea with outcomes in a large cohort of US veterans. *Thorax*, 70(9), 888-895. doi: 10.1136/thoraxjnl-2015-206970

Pinto, J.A., Ribeiro, D.K., Cavallini, A.F.S., Duarte, C., & Freitas, G.S. (2016). Comorbidities associated with obstructive sleep apnea: A retrospective study. *International Archives of Otorhinolaryngology*, 20(2), 145-150. doi: 10.1055/s-0036-1579546

Shapiro, C., & Zalai, D. (2013). That’s one small book for man, one giant leap for CPAP compliance. Association between patient education and CPAP compliance in an urban and rural setting in Canada. *Sleepmedicine*, 14(s1), e264-e265. doi: 10.1016/j.sleep.2013.11.643

Sylvia, E., Parks, B., & Grund, C. (2015). Pathfinding on the frontier. *American Journal of Nursing*, 115(10), 58-63. doi: 10.1097/01.NAJ.0000471946.51739.b5

Wells, M.E., & Vaughn, B.V. (2012). Poor sleep challenging the health of a nation. *Neurodiagnostic Journal*, 52(3), 233-249. doi: 10.1080/21646821.2012.11079859

Proposed Best Practice

Adult patients presenting for primary care should be:

- **Screened** for obstructive sleep apnea risk factors-- snoring, obesity, alcohol use, smoking, neck circumference greater than 17 inches/men and 16 inches/women, tonsillar hypertrophy, macroglossia.
- **Educated** on comorbidities associated with obstructive sleep apnea--hypertension, myocardial infarction, stroke, depression, heart failure, diabetes, obesity, cardiac arrhythmia, cancer.
- **Referred** to specialist for evaluation with polysomnography (sleep study) and recommended treatment if diagnosed with obstructive sleep apnea.
- **Given** printed educational material to take home and review after the appointment as they may not remember verbal information given at the time of visit.

Conclusion

Providing written educational material regarding obstructive sleep apnea and associated comorbidities to the patient with risk factors seen in a rural clinic, allows them to take information home and review—improving understanding and reinforcing the need for them to follow-up with specialists for testing and treatment evaluation.