

Introduction

- ❖ Obstructive sleep apnea (OSA) is defined as a complete or partial episode of upper airway reduction occurring during the hours of sleep due to the collapsing of the pharyngeal tissue (Bazemore, Barker, Morgan, & Goode, 2018).
- ❖ It is now recognized among scientific circles the seriousness of this breathing disorder which encompasses a range of disorders such as hypertension, stroke, heart failure, coronary heart disease, fatigue, diabetes, obesity, GERD, mood disorders and neurocognitive dysfunctions (Chiu et al., 2016).
- ❖ Early detection of OSA may help health care providers stratify a plan of care by efficiently diagnosing and treating the patient, therefore providing long- term benefits, resulting in a reduction of OSA associated complications.

Aims & Objectives

- ❖ **Aims:** This quality improvement study is to empirically identify individuals who are likely to have OSA.
- ❖ **Objectives:** To evaluate the existing screening process in place at this family practice facility with the help of the SWOT analysis.
- ❖ To introduce an evidence-based questionnaire (STOP-Bang) in their clinical setting.
- ❖ To validate a practical model based on the number of patients positively identified and support the need to embrace and embed the questionnaire into their daily routine.
- ❖ Primary care provider referral to all patients who were identified with intermediate and high-risk factors based on the STOP-Bang tool.

Literature Review

- ❖ The STOP-Bang tool is highly sensitive and can help identify Individual's with high risk factors (Amra et al., 2018).
- ❖ Patients with OSA undergoing bariatric surgery may have postoperative complications compared to patients without OSA.
- ❖ The STOP-Bang tool developed by Dr. Frances Chung in 2008 (Nations, & Mayo, 2016) has proven to have a predictive performance, and it is highly utilized in individuals undergoing surgical procedures (Chung, Abdullah, & Liao, 2016).

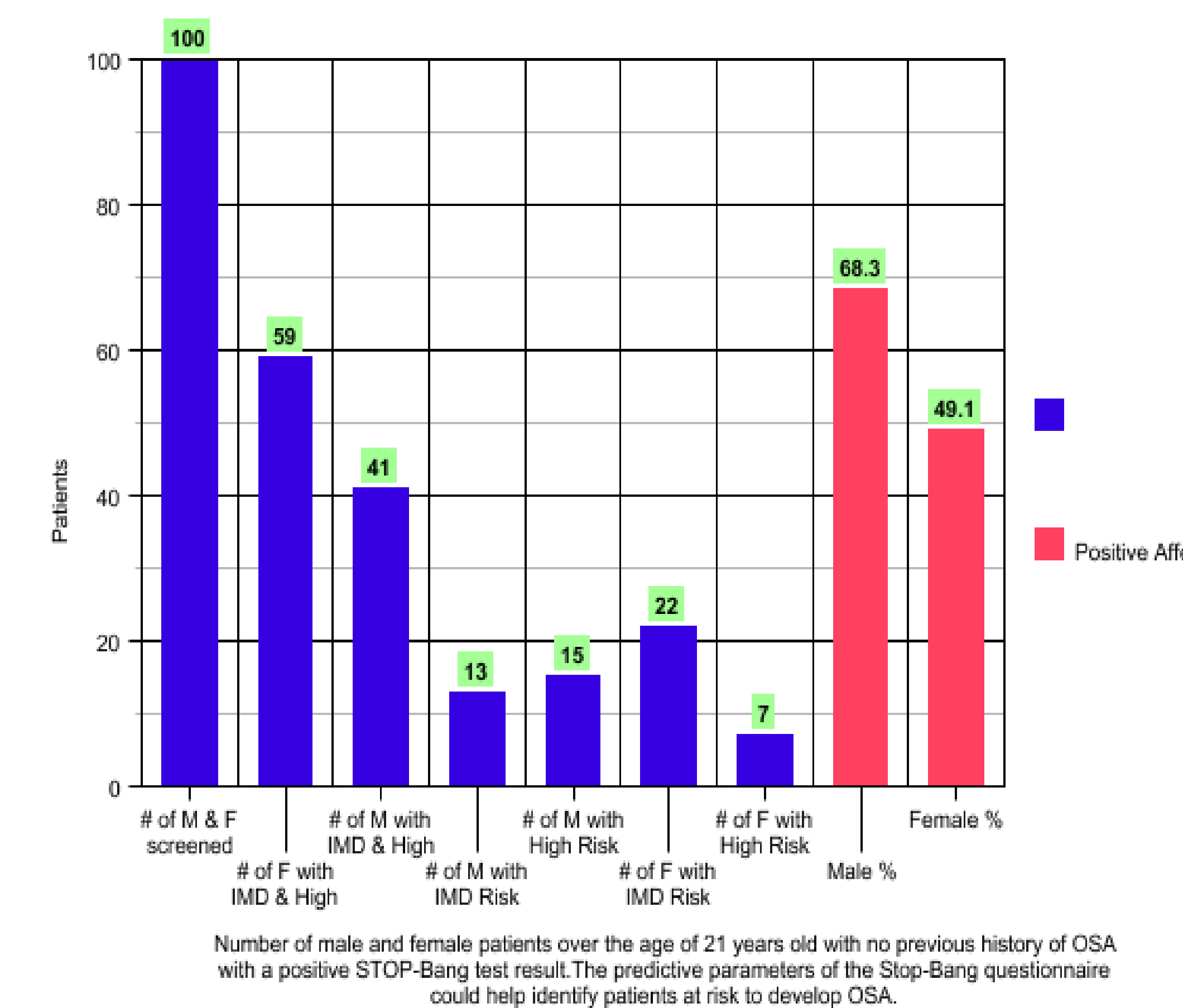
Background & Significance

- ❖ OSA is directly linked to the surrogate markers of cardiac diseases such as heart failure, coronary heart disease, hypertension, and cardiac arrhythmia (Mehra, Collop & Finlay, 2019).
- ❖ The STOP-Bang Questionnaire (SBQ) helps predict patients at risk to develop OSA, with sensitivity of 0.93% and specificity of 0.35% (Turnbull, & Straddling, 2017).
- ❖ The polysomnography confirms the efficacy of the STOP-Bang tool (Kapur et al., 2017).



Why is sleep apnea harmful?
An obstructive sleep apnea (OSA) diagnosis, if not considered, may mean that the patient is not getting enough sleep. If not treated, OSA can lead to serious health problems that may include:
• High blood pressure • Coronary artery disease • Heart disease • Heart attack • Heart failure • Stroke • Diabetes • Impotence • Memory problems and inability to think correctly • Increased insulin resistance (even in non-diabetic patients) • Increased traffic and workplace accidents

20 INTERESTING FACTS TO KNOW ABOUT SLEEP AND SNORING
Bed partners of snorers report they have just 3-5 hours sleep per night



Findings

- ❖ The STOP-Bang Tool encompassed subjective and objective findings, to help predict individuals at risk to develop obstructive sleep apnea.
- ❖ The STOP-Bang tool supported the ability to identify patients at risk to develop OSA and created a sense of urgency.
- ❖ Of the 100 patients recruited for this study, 57% of the participants scored between intermediate and high risk to develop OSA.
- ❖ Pertinent data highlighting the number of individuals identified as high risk, were referred to the provider for follow up.
- ❖ Increased awareness of OSA will help providers pursue an early diagnosis and treatment, improve patient's quality of life, and reduce the risk of comorbidities associated with OSA.

Recommendation & Discussion

- ❖ OSA is a prevalent condition represented by repeated series of desaturation leading to comorbidities such as obesity, cardiovascular, cognitive dysfunction, hypertension, diabetes (Chiu et al., 2016).
- ❖ OSA has been proven to have greater devastating effects in men than in woman (Yacoub et al., 2018).
- ❖ Fat distribution inequalities between males and females, pharyngeal muscles obstruction due to male hormonal effects, and pharyngeal anatomy differences between males and females are contributing factors suggesting why men are more prone to OSA than women (Franklin & Lindberg, 2015).



Conclusion

- ❖ Early detection of obstructive sleep apnea by utilizing an evidence-based tool is key in the prevention of such comorbidities.
- ❖ Timely identification of obstructive sleep apnea and timely implementation (referrals) are paramount to this global public health issue.

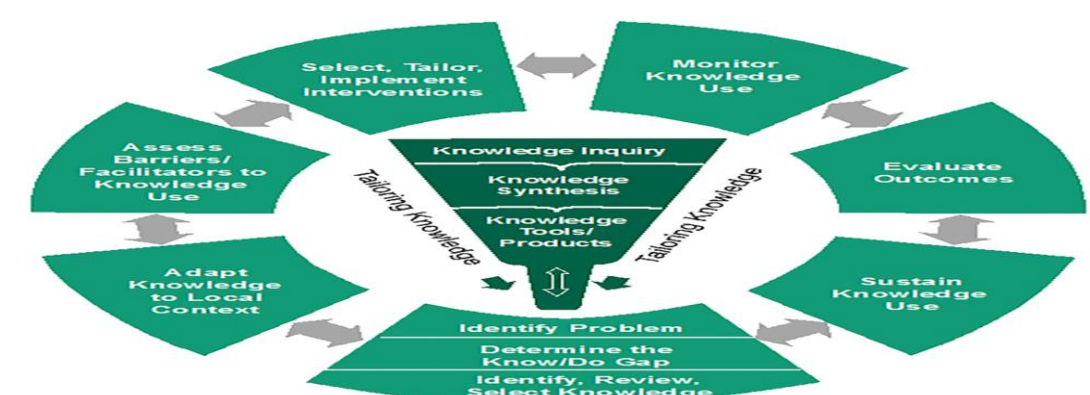
References

- American Academy of Sleep Medicine (2014). Rising prevalence of sleep apnea in U.S. threatens public health. Retrieved from <https://aasm.org/rising-prevalence-of-sleep-apnea-in-u-s-threatens-public-health/>
- Amra, B., Rahmati, B., Soltaninejad, F., Feizi, A., & Amra, B. (2018). Screening questionnaires for obstructive sleep apnea: An updated systematic review. *Oman Medical Journal*, 33(3), 184–192. <https://doi.org/10.5001/omj.2018.36>
- Bazemore, K., Barker, M., Morgan, B., & Goode, V. (2019). Utilization of the STOP-Bang questionnaire as a standardized screening tool for obstructive sleep apnea in veteran administration surgical patients. *Journal of Peri-Anesthesia Nursing*, 34(1), 60–65. <https://doi.org/10.1016/j.jopan.2017.11.006>
- Chiu, H., Chen, P., Chuang, L., Chen, N., Tu, Y., Hsieh, Y., Guilleminault, C. (2017). Diagnostic accuracy of the Berlin questionnaire, STOP-BANG, STOP, and Epworth sleepiness scale in detecting obstructive sleep apnea: A bivariate meta-analysis. *Sleep Medicine Reviews*, 36, 57–70. <https://doi.org/10.1016/j.smrv.2016.10.004>
- Chung, F., Abdullah, H., & Liao, P. (2016). STOP-Bang Questionnaire: A Practical Approach to Screen for Obstructive Sleep Apnea. *Chest*, 149(3), 631–638. <https://doi.org/10.1378/chest.15-0903>
- Franklin, K. A., & Lindberg, E. (2015). Obstructive sleep apnea is a common disorder in the population—a review on the epidemiology of sleep apnea.
- Kapur, V., Auckley, D., Chowdhuri, S., Kuhlmann, D., Mehra, R., Ramar, K., Kapur, V. (2017). Clinical practice guideline for diagnostic testing for adult obstructive sleep apnea: An American academy of sleep medicine clinical practice guideline. *Journal of Clinical Sleep Medicine: JCSM: Official Publication of the American Academy of Sleep Medicine*, 13(3), 479–504. <https://doi.org/10.5664/jcsm.6506>
- Mehra, R., Collop, N., Finlay, G. (2019). Obstructive sleep apnea and cardiovascular disease in adults. Retrieved from <https://www.uptodate.com/contents/obstructive-sleep-apnea-and-cardiovascular-disease>
- Turnbull, C., & Straddling, J. (2017). To screen or not to screen for obstructive sleep apnea, that is the question. *Sleep Medicine Reviews*, 36, 125–127. <https://doi.org/10.1016/j.smrv.2017.03.002>
- Yacoub, M., Youssef, I., Salifu, M. O., & McFarlane, S. I. (2018). Cardiovascular disease risk in obstructive sleep apnea: An Update *Journal of Sleep Disorders & Therapy*, 7(1), 283. doi:10.4172/2167-0277.1000283

Purpose & PICO Question

- ❖ **Purpose:** The purpose of this quality improvement project is to exemplify the need for the implementation of an evidence-based screening tool (STOP-Bang) in a primary care setting, to help identify individuals who are likely to develop obstructive sleep apnea (OSA).
- ❖ **PICO Question:** would the use of the STOP-Bang questionnaire (**I**) at a Primary Care Center for patients aged 21 years or older (**P**) will help identify the patients with obstructive sleep apnea (**O**) compared to patients who did not receive this screening (**C**).

Project Design



- Methodology:** Quality Improvement Project.
- Sample:** Convenient sample (males and females) over the age of 21 with no previous OSA medical history.
- Consent Process:** Informed written consent obtained prior to initiating screening (consent was verbally explained as needed).
- Population:** All patients willing to voluntarily participate in this quality improvement project.