ABSTRACT

Obstructive sleep apnea is the most prevalent of sleep disordered breathing. Obstructive sleep apnea affects 24% of men, 9% of women in the general population. An estimated 82% of men 92% of women with moderate to severe obstructive sleep apnea have not been diagnosed.

In OSA repeated episodes of partial and complete collapse cause a reduction or total cessation of airflow during sleep resulting in oxygen desaturation and arousals from sleep.

OSA is a serious condition that diminishes quality of life and is also associated with many co-morbidities. The average life span of a patient with untreated OSA is reduced.

AIM OF THE STUDY:

The Aim of study is to test the performance of STOP-BANG QUESTIONNAIRE for the diagnosis of Obstructive sleep apnea in preoperative patients.

OBJECTIVE OF THE STUDY:

The objective of the study is to validate The STOP-BANG QUESTIONNAIRE by using POLYSOMNOGRAPHY as a gold standard test.
STUDY DESIGN:

A screening study

INCLUSION CRITERIA:

• Patients coming for preoperative assessment for elective surgeries.
• Adult patients.
• Both genders.
• ASA class 1 and 2.
• Patients who have given valid informed consent.

EXCLUSION CRITERIA:

• Patients not satisfying inclusion criteria.
• Impaired ability to communicate (e.g., confusion, poor hearing or language barrier).
MATERIALS AND METHODS

MATERIALS:

- Sphygmomanometer
- Stethoscope
- Weighing machine
- Height scale
- Inch tape

SOURCE OF DATA:

Patients coming for preoperative assessment clinics at Govt. Kilpauk Medical College Hospital, Chennai between February 2018 and July 2018 will be assessed for inclusion and exclusion criteria and will be included in the study after obtaining written informed consent.
SAMPLE SIZE: 98

Sample size was determined based on the study “Validation of STOP-BANG Questionnaire as a screening tool for OSA in surgical populations”

Study population 4200

Prevalence (p) 43%

Allowable margin error (d) 10%

Sample size (n) = \(4 \times P \times (1-P)/d^2\)

= 98
METHODOLOGY

Out of 25-30 new patients coming to preoperative assessment clinic, one participant will be selected by simple random sampling and the participant will be evaluated using STOPBANG Questionnaire containing four subjective and four demographic parameters and the patients are classified based on STOP-BANG score into

0 – 2 Low risk of sleep apnea
3 – 4 Intermediate risk of having sleep apnea
5 – 8 High risk of having sleep apnea

and the same participant will be subjected to Polysomnography and classified based on APNOEA HYPOPNEA INDEX (AHI) into

Normal - AHI <5
MILD - AHI 5-14
Moderate - AHI 15-29
Severe - AHI 30 and above
STATISTICAL ANALYSIS:

Descriptive statistics will be done for all data and reported in terms of mean values and percentages. Suitable statistical tests of comparison will be done.

Using 2X2 contingency tables, following predictive parameters will be calculated: sensitivity and specificity, positive predictive value (PPV) and negative predictive value (NPV). The data will be analyzed using SPSS version 16 and Microsoft Excel 2007.

RESULTS:

The Results are the Mean age of study participants are 33.8 years and the Standard Deviation is 13.7 years. The Mean BMI of participants are 25.7 and the Standard Deviation is 5.2. The Mean Neck circumference of participants are 40.8 and the Standard deviation is 4.4. For STOP BANG score of 3 for any OSA (AHI>5), sensitivity is 95.7%. As the STOP BANG score increases from 2 to 7, probability of OSA increases from 35.4% to 100% respectively. For STOP BANG score of 3 for Moderate to Severe OSA (AHI>15), sensitivity is 100%. As the STOP BANG score increases from 2 to 7, probability of OSA increases to 18.5% to 100% respectively. For STOP BANG score of 3 for Severe OSA (AHI>30), sensitivity is 100%. As the STOP BANG score increases from 3 to 7, probability of OSA increases to 21.1% to 83.3% respectively.
CONCLUSION

This study has concluded that the STOP-BANG Questionnaire is a concise, effective and reliable tool for screening Obstructive sleep apnea in preoperative patients. It facilitates efficient allocation of resources in both diagnosing and treating previously unrecognized Obstructive sleep apnea. The probability of moderate to severe Obstructive sleep apnea increases in direct proportion to the STOP-BANG score which makes the Questionnaire an easily used tool for identifying patients at high risk for Obstructive sleep apnea.