

# Original Article

## Prevalence of Symptoms and Risk of Sleep Apnea in General Patients in Barabanki, Uttar Pradesh, India

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### ABSTRACT:

**Background:** Obstructive sleep apnea syndrome (OSAS) is an incessant, dynamic illness with high morbidity and mortality. It is underdiagnosed, particularly among ladies. OSA stays undiscovered in numerous people. The principle target of this examination is to study prevalence of symptoms and risk of sleep apnea in general patients in Barabanki, Uttar Pradesh, India. **Materials and Methods:** Study member incorporates 120 back to back patients who were > 15 years old, paying little respect to the purpose behind the visit. In this planned study, a prepared, trained attendant regulated the Berlin Questionnaire to a successive random number of patients. We gathered statistic data, pervasiveness of self-reported chronic snoring, sleepiness, obesity (body mass index [BMI] > 30), hypertension, and calculation of OSA risk. **Result:** 55% (n = 66) of the respondents were female, while 45% (n = 54) were male. Twenty five respondents met the criteria for the high risk scoring. This gives a prevalence rate of 20.83%, while the remaining of the members was named generally safe and are at low risk. The general mean age of the high risk respondents was 37.9 ± 8.5 years. The most astounding prevalence was seen between age 45 to 55 in the two sexes. Sixty two percent of the high hazard gather had a weight record (BMI) 30 kg/m<sup>2</sup> and the mean BMI was 32.6 ± 4.6 kg/m<sup>2</sup>. **Conclusion:** The prevalence of symptoms of OSAS among grown-up Barabanki, Uttar Pradesh, India natives is high, patients are in danger for OSAS. Considering the serious adverse health and personal satisfaction outcomes of OSA, endeavors to facilitate analysis and treatment are demonstrated.

**Keywords:** Insomnia, Obstructive apnea syndrome (OSA), Prevalence, Risk factors.

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### INTRODUCTION:

Obstructive sleep apnea syndrome (OSA) is described by dreary scenes of upper airway route obstacle that happen amid rest for the most part connected with a diminishment in blood oxygen immersion.<sup>1</sup>The clinical indications of OSA incorporate saw apneas, wheezing, stifling/choking scenes, unnecessary daytime drowsiness, non-remedial rest, nocturia, rest discontinuity/rest support a sleeping disorder, long length of rest, morning cerebral pains, loss of libido, fractiousness, and diminished concentration and memory.<sup>2</sup> Some of these side effects are likewise present in sleep deprivation sufferers, which may make finding and administration of OSA more troublesome in these subjects. Both sleep deprivation and direct to serious OSA are related with a

higher danger of cardiovascular dismalmess and mortality, which legitimizes the presentation of viable treatment.<sup>3</sup>

The most critical restorative outcomes incorporate expanded danger of hypertension, coronary vascular disease, congestive heart failure, cerebrovascular infection, glucose intolerance and weakness. Extreme, untreated OSA has as of late been connected to expanded cardiovascular mortality. Notwithstanding its commitment to restorative ailment, untreated OSA can cause daytime lethargy, intellectual weakness, misfortune in work profitability, and expanded danger of car accidents.<sup>4</sup> Despite the fact that detailed discussion of the pathophysiology of airflow hindrance in OSAS is outside the extent of this article, unmistakably upper airway collapse regularly comes about because of a combination of anatomic elements that incline

the aviation route to crumple amid motivation, in addition to neuromuscular remuneration that is lacking amid rest to keep up aviation route patency.<sup>5</sup> The relative commitment of anatomic versus neuromuscular variables is probably going to change significantly among people and may fluctuate impressively among bunches characterized on the premise of age, sex, body propensities, race, ethnicity, and overweightness. The prevalence of OSAS is expanding among overweight and corpulent patients and it is outstanding that weight gain and obesity are critical determinants in the movement of OSAS.<sup>6</sup>

The prevalence of OSA is as of now evaluated to be in the vicinity of 5% and 10%. It is assessed that exclusive 10% of the populace has been satisfactorily screened for suitable analysis. This gauge depends on the pervasiveness of risk factors for OSA in the populace.<sup>7,8</sup> In danger populace, in any case, is significantly bigger, and the way to suitably screen patients stays to be precisely characterized.

One screening device is the Berlin questionnaire, which is a straightforward instrument that has been examined in essential care settings. This instrument is utilized to characterize subjects who are at high risk and generally safe for OSA by recognizing snoring behavior, daytime sleepiness, obesity, and hypertension. The reason for this investigation was to survey the prevalence of individuals who were at risk for OSA in Barabanki, Uttar Pradesh, India, utilizing the Berlin questionnaire.

**MATERIALS AND METHODS:**

The survey was conducted over a 2-year period (from 2007 to 2009) and the study was approved by the ethics committee of the Institution and the participants were selected from consecutive patients who were >15 years of age, regardless of the reason for the visit to primary care centers. The avoidance criteria incorporated the presence of a major psychiatric disorder (psychotic disorder), uncontrolled heavy somatic disease, chronic pulmonary disease, inflammatory or infectious disease, history of cranial trauma, history of central nervous system injury that could involve respiratory centres in the brain, history of craniofacial or thoracic cavity malformations, pregnancy, OSA already diagnosed or course of treatment before sleep laboratory, predominantly central apnea syndrome, narcolepsy or primary hypersomnia, parasomnia, and presence or history of substance abuse. Prepared specialists and attendant managed an approved Berlin Questionnaire (BQ) to all members. The informed assent was gotten from all members.

The BQ is a validated questionnaire that evaluates the side effects and highlights of OSA. The BQ characterizes patients as being at high or low risk for OSA. The poll is isolated into 3 areas: the primary inspects the the presence and severity of snoring and apnea, the second surveys daytime exhaustion, and the third analyzes the patient's co-morbidities and socioeconomics. Those with positive scores

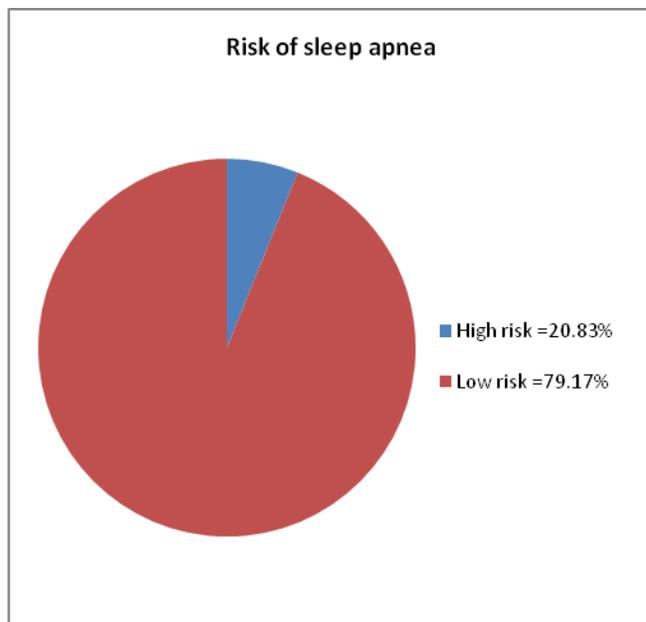
in 2 or 3 of the classifications were thought to be at high risk, while a positive score in one or none of the classifications meant that generally safe/low risk. Three inquiries tended to daytime drowsiness, with a sub-question about sleepy driving. One inquiry for a past filled with high BP. Patients were to give data on age, weight, height, and sex. Height was measured by utilizing a stature meter, while a weighing scale was utilized for measuring the weight to the closest kilogram. Body mass index (BMI) was ascertained utilizing weight in kilograms over height in meters squared (kg/m<sup>2</sup>). Body mass index  $\geq 30$  kg/m<sup>2</sup> was utilized to characterize obesity. Age was recorded in complete years at the time of the appointment. Arterial hypertension: previous diagnosis of SAH, systolic blood pressure (SBP)  $\geq 140$  mm Hg and/or diastolic blood pressure (DBP)  $\geq 90$  mm Hg measured at the time of the appointment, or regular use of anti-hypertensive drugs. Obtained data was then analysed.

**RESULTS:**

55% (n = 66) of the respondents were female, while 45% (n = 54) were male. Twenty five respondents met the criteria for the high risk scoring. This gives a prevalence rate of 20.83%, while the remaining of the members was named generally safe and are at low risk. The general mean age of the high risk respondents was 37.9  $\pm$  8.5 years. The most astounding prevalence was seen between age 45 to 55 in the two sexes. Sixty two percent of the high hazard gather had a weight record (BMI) >30 kg/m<sup>2</sup> and the mean BMI was 32.6  $\pm$  4.6 kg/m<sup>2</sup>.

**Table 1:** Demographic details

Variables	Number
<b>Sex</b>	
Male	54
Female	66
<b>Age (year)</b>	
1 5-25	11
26-35	22
36-45	27
46-55	44
>55	16
<b>Diabetes</b>	
Yes	34
No	86
<b>Hypertension</b>	
Yes	39
No	81
<b>Smoking</b>	
Yes	42
No	78
<b>BMI (kg/m<sup>2</sup>)</b>	32.6 $\pm$ 4.6
<b>Obesity (BMI&gt;30)</b>	74



**DISCUSSION:** The risk factors for sleep apnea are increasing in the general population, the diagnostic criteria for sleep apnea continue to evolve, which results in a shifting metric, making prevalence hard to estimate. Youthful and colleagues went to the pervasiveness of sleep apnea, and evaluated that 5% of grown-ups in Western nations have sleep apnea disorder with sleepiness and an obscure portion have rest cluttered breathing without obvious languor.<sup>9</sup>

In this investigation we found a chime molded connection amongst age and high hazard for sleep apnea, with a declining hazard after the age of 55 years. Some past work shows that the danger of sleep apnea increments straightly with ageing, yet other data have exhibited a decay after midlife.<sup>10,11</sup> By and large, investigations of clinical populaces have tended to discover a peak prevalence of clinically huge sleep cluttered taking in middle age, yet populace based examinations have discovered expanding levels of sleep disarranged breathing with ageing. One conceivable clarification for this disparity has been recommended by Bixler et al<sup>12</sup> as takes after: "Seriousness of sleep apnea, as showed by both number of occasions and least oxygen immersion, diminished with age when any sleep apnea criteria were utilized and while controlling for BMI. The examination demonstrates that the predominance of sleep apnea tends to increment with age yet that the clinical seriousness of apnea diminishes."

In the present investigation, the BQ utilize demonstrated a 20.83% predominance of high risk for OSAS, which is lower than that found in examinations led in the city of São Paulo.<sup>13</sup> In the primary investigation, Tufik et al.,<sup>13</sup> surveying the all inclusive community, have detailed a 32.8% prevalence. The second investigation, surveying truck drivers, has detailed a 35.03% prevalence.<sup>14</sup> The

finding of OSAS in both Lemos et al.,<sup>15</sup> evaluating truck drivers in São Paulo, have revealed a 11.5% prevalence of high hazard for OSAS, assessed utilizing the BQ. Their examination included youthful and thin patients, for the most part men. Another examination led in 40 essential care units, 8 in Germany, 6 in Spain and 26 in the United States, utilizing the BQ, has revealed prevalences of high hazard for OSAS differing from 19.9% in Springfield, USA, to 66.7% in Louisville, USA.

Group based investigations from Western nations have detailed OSAS is more typical in males contrasted and females, and in Jordan, the high danger of obstructive sleep apnea was available in (19.1%) of men and in (14.7%) of women.<sup>16</sup> A populace based examination in the United States uncovered that corpulence was a solid indicator of OSAS risk.<sup>17</sup> Among subjects (BMI > 30 kg/m<sup>2</sup>), 62% of subjects were at high danger of OSAS in our investigation. In an investigation of a Korean populace, it was demonstrated that a critical level of the subjects were not fat but rather still had OSAS.<sup>18</sup> This drove the analysts to conjecture that other hazard factors, for example, content/appropriation of muscle versus fat and anatomical structure of the upper airway route, might be in charge of the higher pervasiveness of OSAS in the Korean populace. Our investigation likewise uncovered a nearby relationship between high BMI and the danger of OSAS in the number of inhabitants in Barabanki, Uttar Pradesh, India; among fat subjects (BMI > 30 kg/m<sup>2</sup>), 62% were at high danger of OSAS and almost 75% of the low risk gathering had a BMI 30 kg/m<sup>2</sup>, which shows obesity in Barabanki, Uttar Pradesh, is an extremely solid indicator of OSAS hazard. Obesity as a rule is more typical in ladies than men.

The general mean age of the high risk for OSAS respondents was 37.9 ± 8.5 years; and the prevalence expanded with age; and the most noteworthy pervasiveness was seen between ages of 45 to 55 years in the two sexual orientations. In our examination populace, 32.5% of the people were delegated hypertensive, expanding the pervasiveness of high risk for OSAS in category III, and, thusly, of worldwide prevalence. A North American study, in which mean age and prevalence of obesity (25%) and of hypertension (29%) were lower than those found in our investigation, has revealed a 27% pervasiveness of high hazard for OSAS. High predominance of hazard for OSAS in category III has additionally been accounted for by Netzer et al. in Stuart, Florida (68.8%).<sup>19</sup>

The part of smoking in the event of obstructive apnea is disputable in the writing. Be that as it may, doubtlessly nicotine would diminish the protection of the upper aviation routes with a resulting decrease of the danger of OSA, though on account of withdrawal, this protection would turn out to be more essential and add to a more serious danger of OSA. In any case, no examination has exhibited a defensive impact of smoking for OSA. In our investigation, we found that smoking isn't a hazard factor for direct to extreme OSA in a sleeping disorder sufferer. This might be clarified by

the way that we included just dynamic smokers who did not have nicotine withdrawal amid their stay at the rest research center.

A self-report of snoring was for the most part as regular in the populace, and without anyone else's input this is rising as a wellbeing issue. The event of snoring is an indicator of a consequent finding of hypertension and of diabetes 10 years later, even after alteration for beforehand all around depicted hazard factors, for example, obesity. Unnecessary daytime sleepiness is an imperative component in the analysis of obstructive rest apnea disorder, however OSA isn't the main source for this indication.

This examination did exclude data on the utility of the survey with respect to quiet result. Likewise, we didn't require expert referral or sleep examines, which may have made a few hindrances and inclination, including that of access and cost, and a more constrained specimen. The information legitimize a more itemized take a gander in danger stratification and clinical choices on the finding and treatment of sleep disorders.

#### CONCLUSION:

The prevalence of symptoms of OSAS among Barabanki, Uttar Pradesh, India nationals and inhabitants is high. The populace is at high hazard for OSAS and this is a genuine general medical problem. Patients may profit by legitimate screening, assessment, and proper counseling for those at high danger of rest apnea by the essential human services doctors/specialists. Also, open mindfulness about the cozy connection amongst weight and sleep apnea may assume a vital part in controlling the predominance of obesity, and subsequently OSAS.

#### REFERENCES:

1. Lavie P. Insomnia and sleep-disordered breathing. *Sleep Med.* 2007; 8(Suppl 4):S21-5.
2. Fleetham J, Ayas N, Bradley D, Ferguson K, Fitzpatrick M, George C, Hanly P, Hill F, Kimoff J, Kryger M, Morrison D, Series F, Tsai W; CTS sleep Canadian thoracic society guidelines: diagnosis and treatment of sleep disordered breathing in adults. *Can Respir J.* 2006;13(7):387-92
3. Peppard PE, Young T, Palta M, et al. Prospective study of the association between sleep-disordered breathing and hypertension. *N Engl J Med* 2000; 342:1378-1384
4. Peker Y, Hedner J, Norum J, et al. Increased incidence of cardiovascular disease in middle-aged men with obstructive sleep apnea: a 7-year follow-up. *Am J Respir Crit Care Med* 2002; 166:159-165
5. Kaneko Y, Floras JS, Usui K, et al. Cardiovascular effects of continuous positive airway pressure in patients with heart failure and obstructive sleep apnea. *N Engl J Med* 2003; 348:1233-1241.

6. Yaggi HK, Concato J, Kernan WN, et al. Obstructive sleep apnea as a risk factor for stroke and death. *N Engl J Med* 2005; 343:2034-2041
7. Pepin M, Schwarze U, Superti-Furga A, Byers PH. Clinical and genetic features of Ehlers-Danlos syndrome type IV, the vascular type. *N Engl J Med* 2000; 342: 673-680.
8. Mhurchu CN, Anderson C, Jamrozik K, Hankey G, Dunbabin D, Australasian Cooperative Research on Subarachnoid Hemorrhage Study (ACROSS) Group. Hormonal factors and risk of aneurysmal subarachnoid hemorrhage: an international population-based, case-control study. *Stroke* 2001; 32: 606-612.
9. Young T, Peppard PE, Gottlieb DJ. Epidemiology of obstructive sleep apnea: a population health perspective. *Am J Respir Crit Care Med* 2002; 165:1217-123928
10. Duran J, Esnaola S, Rubio R, et al. Obstructive sleep apnea-hypopnea and related clinical features in a populationbased sample of subjects aged 30 to 70 yr. *Am J Respir Crit Care Med* 2001; 163:685-689
11. Ancoli-Israel S, Kripke DF, Klauber MR, et al. Sleep disordered breathing in community-dwelling elderly. *Sleep* 1991; 14:486-495
12. Bixler EO, Vgontzas AN, Ten Have T, et al. Effects of age on sleep apnea in men: I. Prevalence and severity. *Am J Respir Crit Care Med* 1998; 157:144-148
13. Tufik S, Santos-Silva R, Taddei JA, Bittencourt LR. Obstructive sleep apnea syndrome in the Sao Paulo Epidemiologic Sleep Study. *Sleep Med.* 2010;11(5):441-6.
14. Moreno CR, Caravalho FA, Lorenzi C, et al. High risk for obstructive sleep apnea in truck drivers estimated by the Berlin questionnaire: prevalence and associated factors. *Chronobiol Int* 2004; 21:871-879
15. Lemos LC, Marqueze EC, Sachi F, Lorenzi-Filho G, Moreno CR. Obstructive sleep apnea syndrome in truck drivers. *J Bras Pneumol.* 2009;35(6):500-6.
16. Jorge AJ, Rosa ML, Fernandes LC, Freire MD, Rodrigues RC, Correia DM, et al. Estudo da prevalência de insuficiência cardíaca em indivíduos cadastrados no Programa Médico de Família - Niterói. Estudo DIGItalIs: desenho e método. *Rev Bras Cardiol.* 2011;24(5):320-5.
17. Koyama RG, Esteves AM, Oliveira e Silva L, Lira FS, Bittencourt LR, Tufik S, et al. Prevalence of and risk factors for obstructive sleep apnea syndrome in USworkers. *Sleep Med.* 2012;13(8):1028-32.
18. Udawadia ZF, Doshi AV, Lonkar SG, Singh CI. Prevalence of sleep-disordered breathing and sleep apnea in middle-aged urban Korean workers. *Am J Respir Crit Care Med.* 2004;169(2):168-73.
19. Netzer NC, Hoegel JJ, Loube D, Netzer CM, Hay B, Alvarez-Sala R, et al. Prevalence of symptoms and risk of sleep apnea in primary care. *Sleep in Primary Care International Study Group.* 2003;124(4):1406-14.

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