

## Knowledge, Attitude and Perception towards Snoring among Respondents in Ekiti State, South West Nigeria

Gabriel Toye Olajide<sup>1\*</sup>, Adebayo Makinde Adeniyi<sup>2</sup>, Anthony Oyebanji Olajuyin<sup>3</sup>, Waheed Atilade Adegbiyi<sup>3</sup> and Mathew Segun Agboola<sup>4</sup>

<sup>1</sup>Department of ENT, Federal Teaching Hospital Ido-Ekiti, Afe-Babalola University, Ado-Ekiti (ABUAD), Nigeria

<sup>2</sup>Department of Community Health, Federal Teaching Hospital Ido-Ekiti, Nigeria

<sup>3</sup>Department of ENT, Ekiti State University Teaching Hospital, Ado Ekiti, Nigeria

<sup>4</sup>Department of Family Medicine, Federal Teaching Hospital Ido-Ekiti, Nigeria

### Abstract

**Background:** Snoring is a clinical condition that causes some serious social and health problems among populace. **Objective:** This study was to determine the prevalence, knowledge, attitude and perception of respondents in Ekiti, South western Nigeria toward snoring. **Methodology:** This was a cross-sectional descriptive study conducted among adult population in three local government areas of Ekiti State, South-West Nigeria. A multistage random sampling technique was adopted to select 241 respondents for this study. A simple random sampling by balloting was used to select one Local Government Area (LGA) each from the three senatorial districts. This study was carried out in form of an outreach programme over a period of 4 months from January to April, 2019. A pre-tested interviewer semi-structured open ended questionnaire was used to collect quantitative data on socio-demographic variables, knowledge, attitude and perception of the respondents on snoring. Data generated were descriptively analyzed using Statistical Package for the Social Sciences (SPSS) Version 20.0 and the results were presented in tables, charts and adjusted odd ratio. **Results:** A total of 241 respondents were analyzed, made up of 88 (36.5%) males with a male to female ratio of 1:1.7. The mean age was 38.6 years (SD  $\pm$  10.3). The age group 30-39 years has the highest response which constitutes 38.6%. Majority (91.3%) were Christian and 172 (71.4%) were married. The estimated prevalence of snoring among couples was 30.7%. Only about 109 (45.2%) of the respondents were adjudged to have positive attitude. Factors such as occupation, education, knowledge and attitude were found to be significantly related to the perception of respondents about snoring at 0.05 levels. **Conclusion:** The prevalence of snoring in this study was 30.7%. Despite good knowledge and perception of snoring among the respondents, less than half of them has positive attitude towards snoring. It is important to identify the causes of snoring and treat them immediately to avoid complications.

**Keywords:** Knowledge; Perception; Attitude; Snoring; Respondents; Ekiti

### Introduction

Snoring is a very common medical disorder in the community but remains under diagnosed [1]. It is an abnormal sound of breathing during sleep due to turbulence of air passing through the partially obstructed airway. It was considered as one of the most common clinical symptoms of Obstructive Sleep Apnea (OSA) [2]. The estimation of snoring prevalence ranged between 16% and 89% of the general population [3]. Although different sleep studies have reported a varied prevalence of snoring and related disorders among children and young adults [4,5]. Snoring is a nonspecific symptom that is sometimes a sign of respiratory infection, a stuffy nose or allergy and at other times a symptoms of sleep apnoea [6]. Many risk factors are associated with snoring including obesity, alcohol intake, smoking, sedatives, sleeping habit, craniofacial anomalies and been a male. Some of these risk factors are modifiable and hence the prevalence of snoring can be reduced if the populace have the knowledge and willingness to make the appropriate lifestyle changes [7]. Some symptoms of abnormal snoring may include restlessness, abnormal sleep position, abnormal chest movements, mouth breathing, frequent awakening episodes, bedwetting, excessive sweating and night terrors [4]. Several epidemiologic studies have described the higher incidence of snoring and sleep apnoea among men compared to their female counterparts. Several explanation accounts for this: first, women may be less likely to report classical symptoms such as loud snoring, apnoea, nocturnal sorting or gasping [8,9]. Secondly; differential response of the bed partner to the symptoms of obstructive breathing during sleep may also contribute to the clinical under recognition of the disorder in women [9].

Snoring apart from being detrimental to the snorer, it can cause the snorer's bed partner or roommates to lose sleep. There is psychological component in snoring which causes discomfort in any listener, depending on the loudness, tone, frequency, and any other audiological attributes of the snorer [10]. There is no doubt that snoring is one of the most common health problems among the populace with little attention given to it. Therefore this study was design to determine the prevalence, knowledge, attitude and perception of respondents toward snoring in Ekiti state, south west, Nigeria.

### Methodology

This was a cross-sectional descriptive study conducted among young adult population in three local government areas of Ekiti State, South-West Nigeria. A multistage random sampling technique was adopted to select 241 respondents for this study. In the first stage, a simple random sampling by balloting was used to select one LGA each from the three senatorial districts. In the second stage, we randomly selected two towns from each of the LGA. This study was carried out in form

**\*Corresponding author:** Gabriel Toye Olajide, Department of ENT, Federal Teaching Hospital Ido Ekiti, Afe Babalola University, Ado Ekiti, Nigeria, Tel: + 2348034656993; E-mail: toyeolajide@yahoo.co.uk

**Received:** October 21, 2019; **Accepted:** November 19, 2019; **Published:** November 25, 2019

**Citation:** Olajide GT, Adeniyi AM, Olajuyin AO, Adegbiyi WA, Agboola MS (2019) Knowledge, Attitude and Perception towards Snoring among Respondents in Ekiti State, South West Nigeria. Otolaryngol (Sunnyvale) 9: 385.

**Copyright:** © 2019 Olajide GT, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

of an outreach programme over a period of 4 months from January to April, 2019. A pre-tested semi-structured interviewer administered open ended questionnaire was used to collect quantitative data on socio-demographic variables, knowledge, attitude and perception of the respondents on snoring. (The pre-test was done in another LGA which was not included in the study area). Also information about their partners (spouses, room/bed mates) in relation to snoring and sleep related problems were collected. Inclusion criteria includes respondents above 18 years of age and those that have given consent to participate in the study. Their confidentiality was assured. Ethical clearance/permission to carry out the study was granted by the Research and Ethical Committee of the hospital. Data generated were descriptively analyzed using SPSS Version 20.0 and the results were presented in tables, charts, chi-square and adjusted odd ratio.

## Results

A total of 241 respondents were analyzed, made up of 88 (36.5%) males and 153 (63.5%) females with a male to female ratio of 1:1.7. Their age ranges from 18 years to 60 years with a mean of  $38.6 \pm 10.3$  SD years. The age group 30-39 years has the highest response which constitutes 38.6%. 79 (32.8%) of the respondents were LGA staff, while 57 (23.7%) were teachers, in all 136 (56.5%) of the respondents were Civil Servants. 140 (58.1%) of the respondents had tertiary education. 172 (71.4%) were married, while 220 (91.3%) were Christian (Table 1). The estimated prevalence of snoring among couples was 30.7% (Figure 1).

Variable	Frequency (N=241)	Percentage (%)
<b>Age group (in years)</b>		
<20	4	1.7
20 – 29	39	16.2
30 – 39	93	38.6
40 – 49	66	27.4
50 – 59	30	12.4
>60	9	3.7
Mean age $\pm$ SD	$38.6 \pm 10.3$	-
<b>Gender</b>		
Male	88	36.5
Female	153	63.5
<b>Occupation</b>		
Teaching	57	23.7
Farming	18	7.5
Trading	29	12
LGA staff	79	32.8
Artisan	16	6.6
Unemployed	42	17.4
<b>Educational status</b>		
No formal education	4	1.4
Primary	20	8.3
Secondary	77	32
Tertiary	140	58.1
<b>Marital status</b>		
Single	55	22.8
Married	172	71.4
Widowed	9	3.7
Divorced	5	2.1
<b>Religion</b>		
Christianity	220	91.3
Islam	21	8.7

Table 1: Socio-demographic characteristics of respondents.

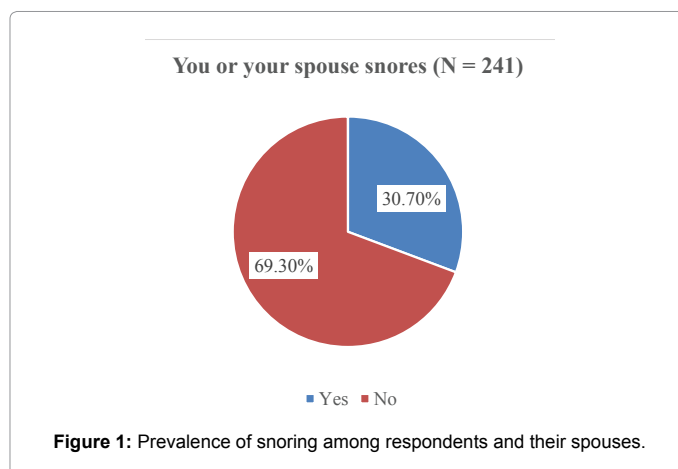


Figure 1: Prevalence of snoring among respondents and their spouses.

Variable	Frequency (N=241)	Percentage (%)
<b>Possible cause(s) of snoring</b>		
Obesity/ Overweight	195	80.9
Alcohol consumption	215	89.2
Cigarette smoking	165	68.5
Sleeping drugs like Valium, Lexotan	159	66
Blockage in the nose/ throat	182	75.5
Stress	222	92.1
Old age	160	66.4
<b>Possible result(s) of snoring</b>		
Excessive somnolence	102	42.3
Lack of concentration	186	77.2
Road Traffic Accident	156	64.7
Impotence	151	62.7
Diabetes	186	77.2
Hypertension/ Heart disease	200	83
Morning headache	64	73.4
Don't know	21	8.7
<b>Treatment(s) of snoring</b>		
Counselling	143	59.3
Drugs	171	71
Operation	164	68
Fixing a machine in the mouth	160	66.4
Prayer/ Spiritual	115	47.7
Local/ native concoction	122	50.6
No treatment	56	23.2

Table 2: Knowledge of respondents about snoring.

Females constitute majority (64.9%) of the snorer. Out of those that snores, majority (79.7%) of their spouses or roommate (students) reported that they had been disturbed from their sleep by the snoring. Table 2 showed knowledge of respondents about snoring, 92.1% claimed that snoring is due to stress. As per result of snoring, 83.0% claimed that habitual snoring can lead to hypertension or heart disease. About 71.0% of the respondents claimed that treatment of snoring is done with medications. Table 3 showed attitude of respondent towards snoring, more than half (53.3%) agree to go ahead with marriage even if they know that their spouse snores. Majority (80.1%) will advise their spouse to adjust position as steps in coping with snoring. Table 3 also showed the perception of respondents towards snoring, that 59.8% of the respondents claimed that snoring is commoner in male, 61% show that it can cause social problem, 72.8% claimed that it can cause

misunderstanding among couple. Majority (70.5%) perceived that it is hereditary while 74.3% of the respondents claimed that it is a curable condition.

Only about 109 (45.2%) of the respondents were adjudged to have a positive attitude, 169 (70.1%) and 153 (63.5%) were able to achieve good levels of knowledge and perception respectively (Table 4). Factors such as occupation, education level, knowledge and attitude were found to be significantly related to the perception of respondents about snoring at 0.05 levels (Table 5). The LGA staff exhibited a lower likelihood of having a good perception compared to their teaching counterparts.

Variable	Frequency (N=241)	Percentage (%)
<b>Will still go ahead with marriage if spouse snores</b>		
Yes	129	53.5
No	49	20.3
Not sure	63	26.1
<b>Coping steps if spouse snores</b>		
Sleep in another room	179	74.3
Advise my spouse to adjust position	193	80.1
Prayer & fasting	83	34.4
Advise spouse to seek medical attention	178	73.9
Spiritual solution	69	28.6
Fighting	68	46.3
Misunderstanding	107	72.8
Irritation and annoyance	74	50.3
Isolation	82	55.8
<b>Snoring can be hereditary</b>		
Yes	170	70.5
No	39	16.2
Not sure	32	13.3
<b>Snoring can be cured</b>		
Yes	179	74.3
No	19	7.9
<b>Will still go ahead with marriage if spouse snores</b>		
Yes	129	53.5
No	49	20.3
Not sure	63	26.1
<b>Coping steps if spouse snores</b>		
Sleep in another room	179	74.3
Advise my spouse to adjust position	193	80.1
Prayer & fasting	83	34.4
Advise spouse to seek medical attention	178	73.9
Spiritual solution	69	28.6

Table 3: Perception and attitude of respondents about snoring.

Variable	Frequency (N=241)	Percentage (%)
<b>Knowledge</b>		
Good (≥ 50%)	169	70.1
Poor (<50%)	72	29.9
<b>Attitude</b>		
Positive (≥ 50%)	109	45.2
Negative (<50%)	132	54.8
<b>Perception</b>		
Good (≥ 50%)	153	63.5
Bad (<50%)	88	36.5

Table 4: Assessment of respondents' knowledge, attitude and perception towards snoring.

However, respondents with a good knowledge and positive attitude respectively were 15.563 and 2.997 times more likely to have a good perception of snoring, Adjusted odds ratio at 95% confidence interval (Table 5).

## Discussion

The prevalence of snoring in our study was 30.7%. This was slightly higher than the previous studies in which Angeles et al. [11] and Prasad et al. [12] recorded 28.7% and 28.3% respectively. However a lower prevalence of 17.7% was obtained in another study among medical students. It shows that the prevalence of snoring increases from childhood to the adult age group with a steep rise during adolescent [13]. Majority of the spouses or bed partners of those that snores claimed that they have been disturbed during the act. Often time snoring is not usually a very serious condition but merely a nuisance for the bed partner. However, if the culprit is a habitual snorer, he or she may not only disrupt the sleep patterns of those that close-by, but also impair their own (snorers) sleep quality [14]. Females respondents were more than their male counterpart in this study, this might be attributed to where the study was carried out in which majority (58.1%) are civil servants and they are mostly females. Previous study also recorded more females than their male's counterpart [15]. However, large percent (64.9%) of those that snores in our study are females as compared with other studies where males are predominant [16]. Men generally tend to involve in many strenuous activities in order to provide for family needs and daily living. Majority (92.1%) of the respondents have the knowledge that stress was a major cause of snoring, with another 83.0% of them believed that habitual snoring can also cause hypertension and other cardiovascular diseases. Poor sleep has been linked to stress, though may not be easily noticed. Stress tends to releases a tension-promoting hormone, cortisol, which activates the anxiety promoting areas of the brain [17]. Obstructive sleep apnoea occurs in chronic snorers and had been known to strain the heart, raise the sufferer's blood pressure and increase the risks of heart attack and stroke [18]. Less than half of our respondents has positive attitude towards snoring. The way to cope with spouse or bed partner that snores may be challenging as it may depends on the mutual understanding between the partners. Also snoring apart from having damage effect on the health of the snorer; it causes the snorer's bed partners or roommates to lose sleep. Social problems that may strain relationships among couples, bed partners and even children may arise as it was noticed in this study. Large percentages of our respondents have good levels of knowledge and perception to snoring as majority of our respondents knows the possible causes and consequences of snoring. Some risk factors that have been linked to snoring are preventable. Such preventive measures will include lifestyle modification such as control of weight, regulation of work hours, stopping of alcohol intake, avoiding smoking and regular exercise [19].

## Conclusion

Snoring is a notable cause of social problem with tendency to cause obstructive sleep apnea. The prevalence in this study was 30.7%. Despite good knowledge and perception of snoring among the respondents, less than half of them has positive attitude towards snoring. It is important to identify the causes of snoring and treat them immediately to avoid complications.

## Conflict of Interest

The author declares no conflicts of interest during the course of the making of this paper.

Variable	Perception		$\chi^2$	p	AOR (95% CI)
	Good n (%)	Bad n (%)			
<b>Age group (in years)</b>					
<20	2 (50.0)	2 (50.0)	3.162	0.675	-
20 – 29	24 (61.5)	15 (38.5)	-	-	-
30 – 39	64 (61.5)	15 (38.5)	-	-	-
40 – 49	40 (60.6)	26 (39.4)	-	-	-
50 – 59	19 (63.3)	11 (36.7)	-	-	-
>60	4 (44.4)	5 (55.6)	-	-	-
<b>Gender</b>					
Male	51 (58.0)	37 (42.0)	1.829	0.176	-
Female	102 (66.7)	51 (33.3)	-	-	-
<b>Occupation</b>					
Teaching	38 (66.7)	19 (33.3)	13.643	<b>0.018</b>	1
Farming	5 (27.8)	13 (72.2)	-	-	0.851 (0.113 – 6.402)
Trading	22 (75.9)	7 (24.1)	-	-	1.071 (0.262 – 4.386)
LGA staff	49 (62.0)	30 (38.0)	-	-	<b>0.298 (0.099 – 0.894)</b>
Artisan	9 (56.2)	7 (43.8)	-	-	1.081 (0.155 – 7.531)
Unemployed	30 (71.4)	12 (28.6)	-	-	0.787 (0.257 – 2.409)
<b>Educational status</b>					
No formal education	1 (25.0)	3 (75.0)	17.898	<b>&lt;0.001</b>	1
Primary	5 (25.0)	15 (75.0)	-	-	1.039 (0.050 – 21.491)
Secondary	49 (63.6)	28 (36.4)	-	-	1.696 (0.074 – 38.843)
Tertiary	98 (70.0)	42 (30.0)	-	-	2.425 (0.101 – 57.932)
<b>Marital status</b>					
Single	35 (63.6)	20 (36.4)	0.287	0.962	-
Married	110 (64.0)	62 (36.0)	-	-	-
Widowed	5 (55.6)	4 (44.4)	-	-	-
Divorced	3 (60.0)	2 (40.0)	-	-	-
<b>Religion</b>					
Christianity	136 (61.8)	84 (38.2)	3.028	0.082	-
Islam	17 (81.0)	4 (19.0)	-	-	-
<b>Knowledge</b>					
Good ( $\geq 50\%$ )	137 (81.1)	32 (18.9)	75.414	<b>&lt;0.001</b>	<b>15.563 (6.916 – 35.019)</b>
Poor ( $< 50\%$ )	16 (22.2)	56 (77.8)	-	-	1
<b>Attitude</b>					
Positive ( $\geq 50\%$ )	85 (78.0)	24 (22.0)	18.04	<b>&lt;0.001</b>	<b>2.997 (1.417 – 6.336)</b>
Negative ( $< 50\%$ )	68 (51.5)	64 (48.5)	-	-	1
$\chi^2$ – Chi-square, 95% CI – 95% Confidence Interval, p-p value					

**Table 5:** Relationships between socio-demographics, knowledge and attitude of respondents and their perception about snoring.

## References

- Obaseki DO, Erhabor GE, Obaseki JE, Abidoye I, Adebisi A, et al. (2014) Obstructive Sleep Apnea, Excessive Daytime Sleepiness, and Road Traffic Accidents among Interstate Commercial Vehicle Drivers in Nigeria. *J Respirat Med* 2014: 580264.
- Chuang LP, Hsu SC, Lin SW, Ko WS, Chen NH, et al. (2018) Prevalence of snoring and witnessed apnea in Taiwanese adults. *Chang Gung Med J* 31: 175–181.
- Al-Madani GH, Banabilh SM, El-Sakhawy MM (2015) Prevalence of snoring and facial profile type, malocclusion class and dental arch morphology among Snorer and nonsnorer university population. *J Orthod Sci* 4: 108 -112.
- Umana AN, Anah MU, Udowa NE, Mgbe RB, Oyo-Ita A, et al. (2007) Pattern of Snoring among School Children in Calabar, Nigeria. *Niger Med Pract* 51: 103-106.
- Katayoon B, Shahab A, Asghar A, Narges G, Sorush Z, et al. (2006) Prevalence and correlates of snoring in adolescents. *Iran J Allergy Asthma Immunol* 5: 127-132.
- Ferreira AM, Clemente V, Gozal D, Gomes A, Pissarra C, et al. (2000) Snoring in Portuguese Primary School Children. *Pediatrics* 106: E64.
- Mbaave TP, Achinge GI (2016) Prevalence of Snoring and High Risk of Obstructive Sleep Apnea among Medical Doctors in Benue State Nigeria. *J Med Sci Clin Res* 4: 12201-12205.
- Bixler EO, Vgontzas AN, Lin HM, Ten Have T, Rein J, et al. (2001) Prevalence of sleep-disordered breathing in women: effects of gender. *Am J Respir Crit Care Med* 163: 608-613.
- Duran J, Esnaola S, Rubio R, Iztueta A (2001) Obstructive sleep apnea hypopnea and related clinical features in a population-based sample of subjects aged 30 to 70 yr. *Am J Respir Crit Care Med* 163: 685-689.
- <https://answers.yahoo.com/question/index?qid=20061026080336AAznFqJ&page=2>
- Angeles SA, Maria FP, Francisco CG, Emilio GD, Soledad CG, et al. (2001) Sleep-related breathing disorders in adolescents aged 12 to 16 years: Clinical and polygraphic findings. *Chest* 119: 1393-1400.
- Prasad P, Garg R, Verma RK, Agarwal SP, Ahuja RC (2006) A study on snoring habits in healthy population of Lucknow. *Indian J Sleep Med* 1: 37-40.
- Singh V, Pandey S, Singh A, Gupta R, Prasad R, et al. (2012) Study pattern of snoring and associated risk factors among medical students. *Biosci Trends* 6: 57-62.
- <https://www.webmed.com/sleep-disorders/guide/snoring>.
- Olajide TG, Busari OA, Adegbiyi WA, Popoola TA (2018) Snoring and Risk factors of Obstructive sleep apnoea among adult Nigerians. *Intern J of Curr Advanced Res* 7: 16247-16250.
- Akintunde AA, Salau AA, Opadijo OG (2014) Assessment of snoring and obstructive sleep apnoea in a Nigerian university: Association with cardiovascular risk factors. *Niger Med J* 55: 469-473.
- <https://bestantinsnoringdevices.net/is-stress-causing-your-snoring/>
- <https://snorenation.com/can-stress-cause-snore/>
- Sogebi OA, Ogunwale A (2012) Risk factors of obstructive sleep apnea among Nigerian outpatients. *Brazil J Otorhinolaryngol* 78: 27-33.