



Quality of Life among Obstructive Sleep Apnoea Patients

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Abstract:

Introduction: Obstructive Sleep Apnoea is defined by frequent episodes of obstructed breathing while sleep and is the most common form of Sleep disordered breathing. Subjects with OSA commonly report having a decreased QOL. **Aim:** To find out quality of life of Indian patients with varying severity of obstructive sleep apnoea hypopnoea syndrome. **Methodology:** A observational study was conducted on a sample of 75 Subjects A sample of 75 subjects who met the inclusion criteria was selected. Entire procedure was explained and informed consent was obtained from them. AHI was used as screening tool. Diagnosed of cases of OSA were selected with varying severity of disease. Eligible Patients were categorized in three groups based on assessment of AHI. SF – 36 was administered to these patients to assess their quality of life in all the three groups of varying severity of disease. **Result:** SF-26 scores in majority of the dimensions decreases with an increase in AHI Score, the scores are less in GROUP C in comparison to Group A. It has been identified that the AHI Scores and SF-36 findings has a negative correlation, When AHI increases, the SF-36 Scores decreases in a linear manner. Also SF-36 Scores are found to be positively correlated with SPO2 Scores except for the Paramters – Social Functioning. **Conclusion:** Quality of Life in Obstructive Sleep apnoea is found to be affected / reduced and these findings changes with the severity of the disease.

Key Words: Obstructive Sleep Apnoea, Quality of Life.

1. INTRODUCTION:

Obstructive Sleep Apnoea is defined by frequent episodes of obstructed breathing while sleep and is the most common form of Sleep disordered breathing. Specifically, it is characterized by sleep-related decreases (hypopnoea) or pauses (apnoeas) in respiration. An apnoea is defined as at least 10 seconds interruption of oronasal airflow due to complete obstruction of the upper airways, despite of continuous chest and abdominal movements, and is associated with a decrease in oxygen saturation and/or arousals from sleep. An obstructive hypopnoea is defined as at least 10 seconds of partial obstruction of the upper airways, resulting in an at least 50% decrease in oronasal airflow. OSA can be categorised into three groups based on the number of events occurs per hour.¹ Excessive daytime sleepiness (EDS) is the most common complaint in patients with OSAHS, is known to be a predisposing factor for accidents, interpersonal problems and reduced productivity in daily life activities. Severity of OSA affects the extent to which daytime function is impaired. Symptoms other than EDS which greatly impact daytime functioning are neuropsychological symptoms such as irritability, difficulty concentrating, cognitive impairment, depressive symptoms, and other psychological disturbances.² Taking about the prevalence of Obstructive Sleep Apnoea in India, the overall prevalence of Obstructive Sleep APnoea is found to be 9.3%. It is higher (13.6%) in males than in females (5.6%)³

Subjects with OSA commonly report having a decreased QOL. Various studies have been conducted to assess the quality of life of these subjects, majority has shown that these patients have significant impairments in every aspect of health related quality of life and demonstrated a well defined relationship between physiological measures of OSA severity and degree of impairment in health related quality of life.^{4,7} A research was conducted by Naveen Dutt et al in 2013 on Obstructive Sleep Apnoea Patients to evaluate the QOL impairment in patients of obstructive sleep apnoea and its relation with the severity and stages of disease⁷. The findings concluded that OSA causes significant impairment of QOL, but the severity of impairment is not directly proportional to the severity of OSA.⁵

1.1. AIM: To find out quality of life of Indian patients with varying severity of obstructive sleep apnoea hypopnoea syndrome.



2. METHODOLOGY:

Type: Observational study.

Sample Size: 75

Sampling Method: Purposive Sampling.

2.1. INCLUSION CRITERIA:

- Diagnosed cases of OSAHS.
- Age: Between 30-65 years of age.
- Gender: Both males and females.
- Minimum 8 years of education.

2.2. EXCLUSION CRITERIA:

- Presence of other sleep disorders e.g., central sleep apnoea, restless leg syndrome, periodic limb movement disorder etc.
- History of receiving medical intervention for sleep related disorder.
- Any diagnosed cases of psychiatric and neurological illness.
- Any diagnosed cases of systemic illness.

2.3. OUTCOME MEASURE:

SF – 36

- Physical functioning
- Role limitations due to physical health problems
- Body pain
- General health perception
- Vitality
- Social functioning
- Role limitations due to emotional health problems, and
- Mental health

All scores ranged from 0 to 100, with a higher score indicating better QOL. Domains were analyzed separately

Procedure:

A sample of 75 subjects who met the inclusion criteria was selected. Entire procedure was explained and informed consent was obtained from them. AHI was used as screening tool. Diagnosed OSA patients was selected with varying severity of disease. Eligible Patients were categorized in three groups based on assessment of AHI (Apnoea-Hypopnoea index) by overnight PSG.

A- Mild OSAHS group (AHI > 5-15).

B - Moderate OSAHS group (AHI > 15-30), and

C- Severe OSAHS group (AHI > 30).

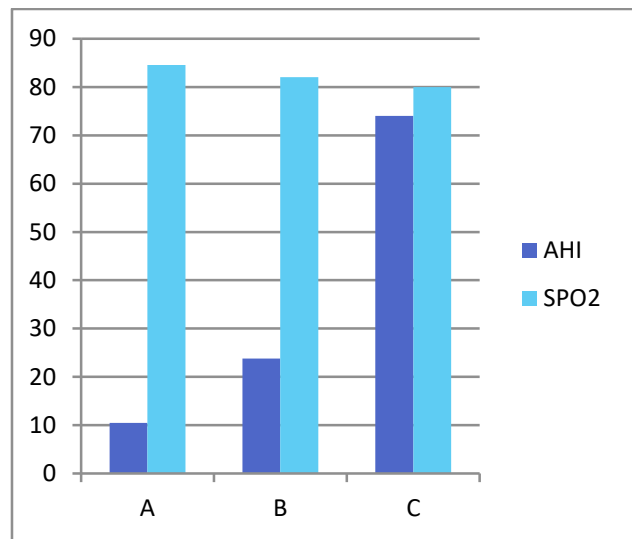
SF – 36 was administered to these patients to assess their quality of life in all the three groups of varying severity of disease

RESULT:

AHI Score and SPO2 in all the three groups of subjects is shown in Figure 1 and Table 1. As the Table 1 indicates, the mean AHI Score in Group A, B and C are 10.48, 23.8 and 74 respectively and mean SPO2 Scores are 84.52, 82 and 80.

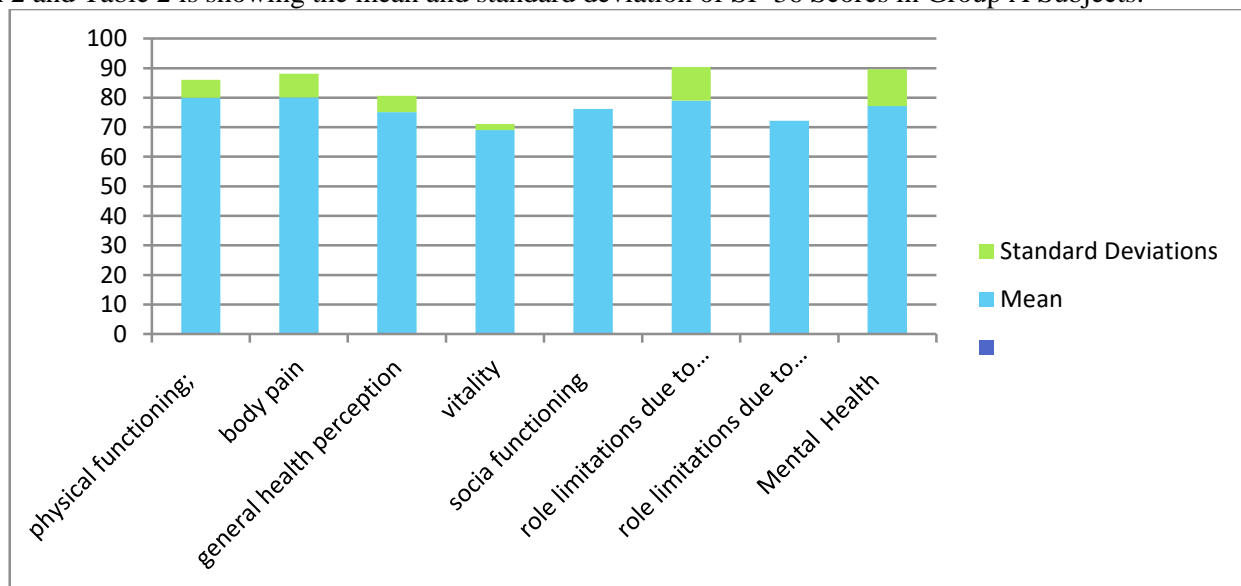
GROUPS	AHI	SPO2
A	10.48	84.52
B	23.8	82
C	74	80

Table 1 - AHI Score and SPO2 in Group A, B and C



Graph 1 – AHI Score and SPO2 in Group A, B and C

Graph 2 and Table 2 is showing the mean and standard deviation of SF-36 Scores in Group A Subjects.



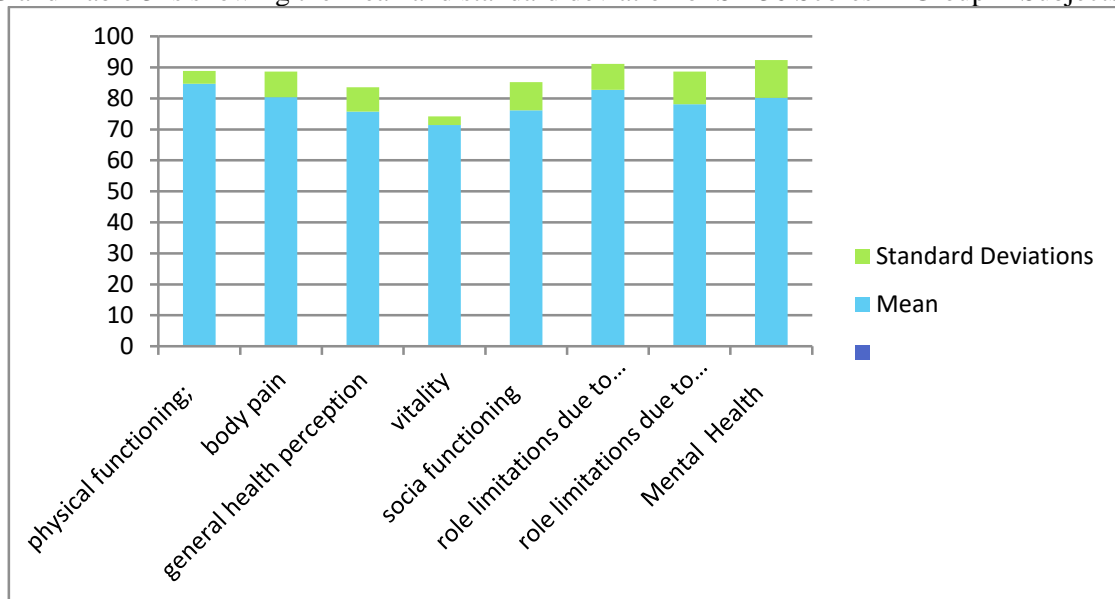
Graph 2 – SF-36 Score in Group A Subjects

Group A	Apnoea-Hypopnea Index	SPO2	Physical Functioning;	Body Pain	General Health Perception	Vitality	Social Functioning	Role Limitations Due To Emotional Health	Role Limitations Due To Physical Health Problems;	Mental Health
	10.48	84.52	85.68	83.04	77.88	72.28	73.2	80.96	75.96	77.52
	3.07	7.1	4.69	7.98	8.07	7.1	7.8	9.2	10.17	10.27

Table 2 - SF-36 Score in Group A Subjects



Graph 3 and Table 3 is showing the mean and standard deviation of SF-36 Scores in Group B Subjects

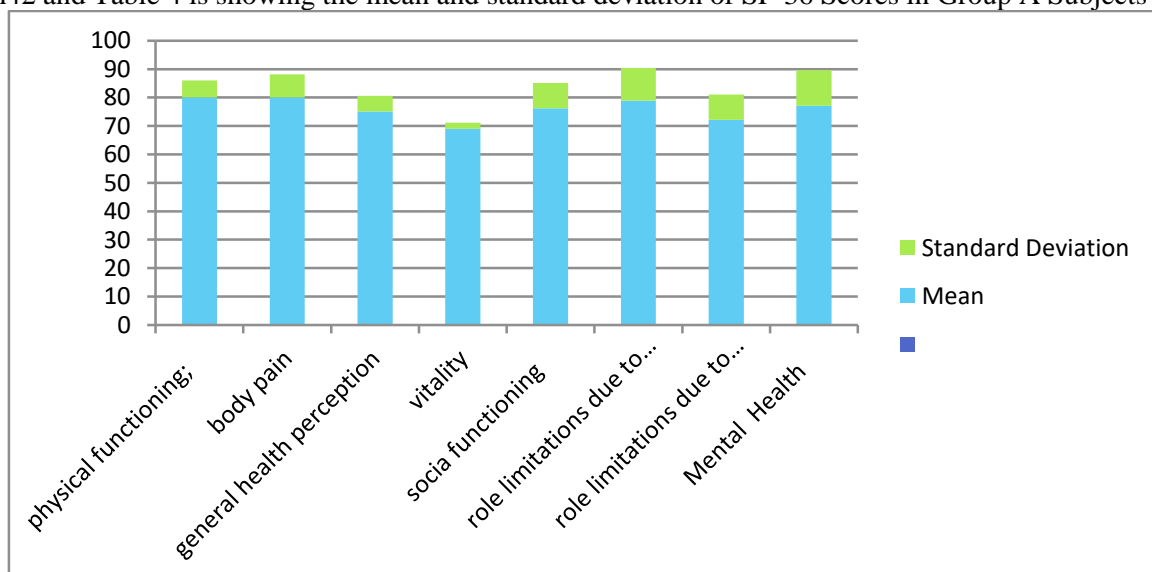


Graph 3 - SF-36 Score in Group B Subjects

Group B	Apnoea-Hypopnoea Index	SPO2	Physical Functioning;	Body Pain	General Health Perception	Vitality	Social Functioning	Role Limitations Due To Emotional Health	Role Limitations Due To Physical Health Problems ;	Mental Health
	23.8	82	84.68	80.36	75.72	71.36	76.12	82.76	78.12	80.2
	4.8	6	4.12	8.25	7.9	2.8	9.1	8.4	10.5	12.2

Table 3 - SF-36 Score in Group B Subjects

Graph42 and Table 4 is showing the mean and standard deviation of SF-36 Scores in Group A Subjects



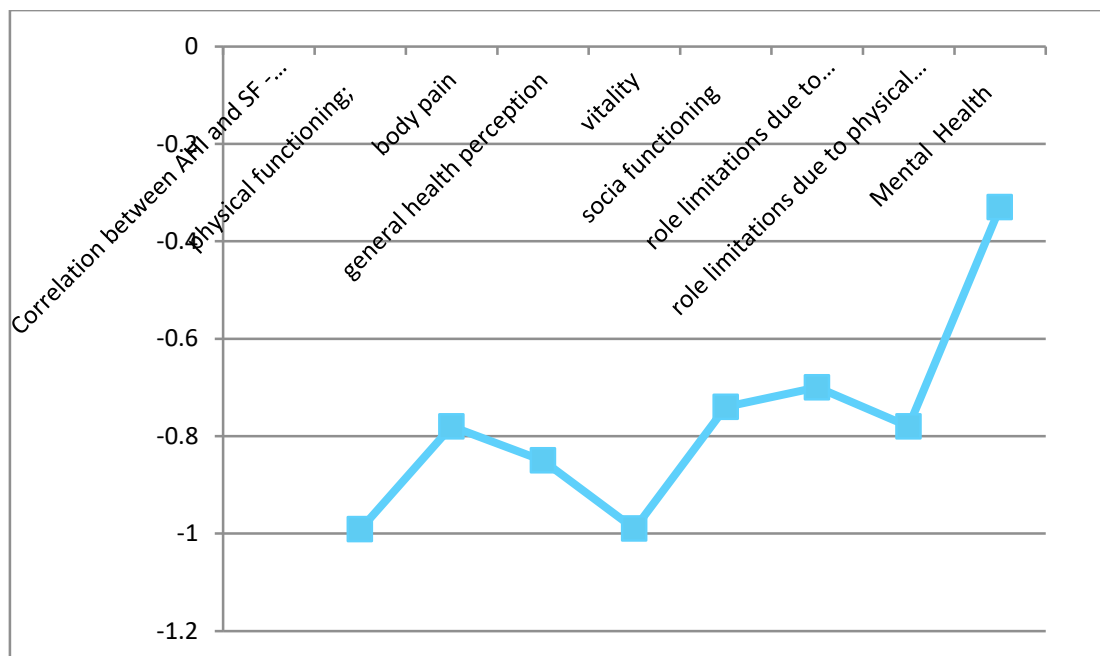
Graph 4 - SF-36 Score in Group C Subjects



Group C	Apnoea - Hypoapnoea Index	SPO2	Physical Functioning;	Body Pain	General Health Perception	Vitality	Social Functioning	Role Limitations Due To Emotional Health	Role Limitations Due To Physical Health Problems;	Mental Health
	54.9	74	80	80.04	75.12	69	76.2	78.96	72.2	77.12
	20.6	11	6	8.07	5.5	2.15	8,6	11.44	8,9	12.47

Table 4 - SF-36 Score in Group C Subjects

Correlation between AHI and SF-36 Scores is shown in graph 5 and Table 5. Findings are suggestive of a negative correlation between the AHI and SF-36 Scores.

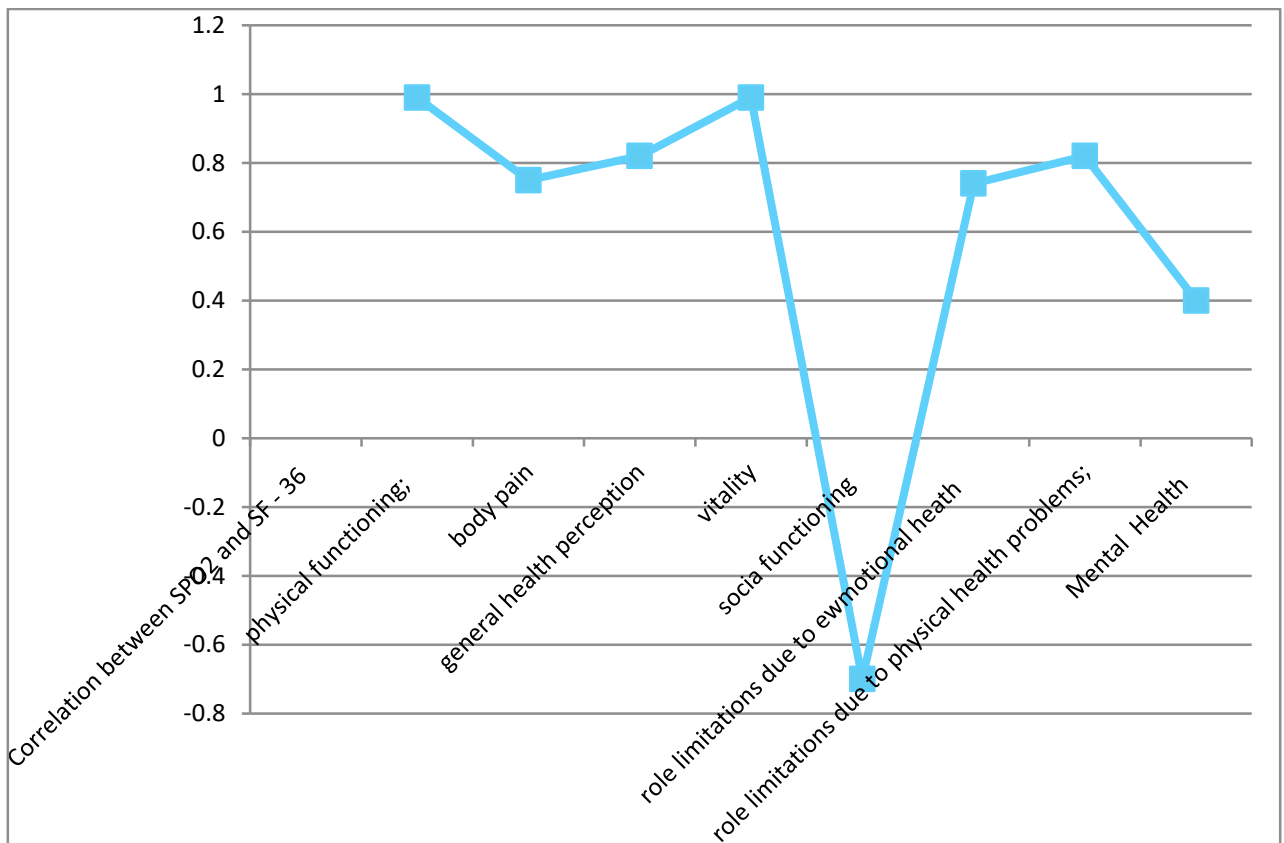


Graph 5 – Correlation between AHI & SF-36 Scores

SF – 36 Parameters	Correlation Between Scores And AHI
Physical Functioning	-0.99145
Body Pain	-0.78
General Health Perception	-0.85
Vitality	-0.99
Socia Functioning	-0.74
Role Limitations Due To Emotional Heath	-0.70
Role Limitations Due To Physical Health Problems	-0.78
Mental Health	-0.33

Table 6 - Correlation between AHI & SF-36 Scores

Correlation between SPO2 and SF-36 Scores is shown in graph 6 and Table 6. Findings are suggestive of a negative correlation between the two.



Graph 6 – Correlation between SPO2 & SF-36 Score

SF – 36 Parameters	Correlation between Scores and SPO2
physical functioning	0.99
body pain	0.75
general health perception	0.82
vitality	0.99
socia functioning	-0.70
role limitations due to ewmotional heath	0.74
role limitations due to physical health problem	0.82
Mental Health	0.40

Table 6 - Correlation between SPO2 & SF-36 Scores

3. DISCUSSION:

In the present Study, we have identified the alteration in AHI Score affects the functioning of Subjects.

When we talk about AHI, the SF-26 scores in majority of the dimensions decreases with an increase in AGI Score, the scores are less in GROUP C in comparison to Group A. It has been identified that the AHI Scores and SF-36 findings has a negative correlation, When AHI increases, the SF-36 Scores decreases in a linear manner. Also SF-36 Scores are found to be positively correlated with SPO2 Scores except for the Paramters – Social Functioning. Our findings are similar to a previous study cobducted in year 2011 by In-Soo Lee, Wayne Bardwell et al on relationship between psychomotor vigilance and quality of life in obstructive sleep apnoea, they concluded that psychomotor vigilance were associated with quality of life.⁴ The another Study which support the findings of our study is conducted by Eric H. Yang et al in year 2000 on sleep apnoea and quality of life to investigate the effects of sleep apnoea on quality of life, It was measured by short form 36 health survey; they found that sleep apnoea has an independent impact on quality of life.⁶

There are various possible reasons behind this decrease in quality of life of these subjects such as Paul M. Macey, Rajesh Kumar et al (2008) conducted a study on brain structural changes in obstructive sleep apnoea to



determine whether obstructive sleep apnoea patients shows indications of axonal injury, they assessed fibre integrity in OSA and control subjects with diffusion tensor imaging (DTI). The maps were spatially normalized, smoothed, and compared using voxel-based statistics to determine differences between OSA and control groups, they concluded that white matter is exclusively affected in OSA patients the alterations include axons linking major structures within the limbic system, Pons, frontal, temporal and parietal cortices, and projections to from the cerebellum.⁷

Terri E. Weaver et al (1997) conducted a study on An Instrument to Measure Functional Status Outcomes for Disorders of Excessive Sleepiness; they concluded that FOSQ can be used to determine how disorders of excessive sleepiness affect patients' abilities to conduct normal activities and the extent to which these abilities are improved by effective treatment of disorder of excessive sleepiness.⁸ In Future Studies, this questionnaire can also be used to determine the impact of Obstructive Sleep Apnoea in Patients

4. CONCLUSION:

Quality of Life in Obstructive Sleep apnoea is found to be affected / reduced and these findings changes with the severity of the disease. Hence, it is important to stop the progression of the disease at an early stage to maintain the quality of life of the patient.

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