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To assess the Effectiveness of Planned Teaching on Knowledge Regarding Obstructive Sleep Apnoea Syndrome among Obese People

Sapna Chandankhede

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Abstract

Background: Short sleep duration and poor quality of sleep, increasingly common in our modern society, have many effects on endocrine and metabolic function. Sleep is a major buffer for hormonal release, glucose regulation and cardiovascular function. Obstructive sleep apnoea syndrome (OSAS) is the most common sleep disorder being diagnosed. Obstructive sleep apnoea syndrome is a chronic condition that is characterized by repetitive upper airway obstructions resulting in intermittent hypoxia.

Objectives:

1. To assess the existing knowledge regarding obstructive sleep apnoea syndrome among obese people.
2. To evaluate the effectiveness of planned teaching on knowledge regarding obstructive sleep apnoea syndrome among obese people.
3. To associate the knowledge scores with selected demographic variables.

Material and Method: This study was based on interventional approach. In this study, 80 obese people are included. The setting of the study was selected area of Wardha.

Result: The result shows that 58(72.5%) had poor level of knowledge score, 22(27.5%) of them had average level of knowledge score in pretest and in posttest none of them had poor and average level of knowledge, 76(95%) of them had good level of knowledge, 4(05%) of them had very good level of knowledge score. Hence planned teaching was effective, calculated 't' value is more than tabulated value and calculated 'p' value was less than accepted level of p=0.05 thus H1 is statistically accepted.

Conclusion: Hence it is concluded that planned teaching was found to be effective in improving the knowledge of obese people regarding obstructive sleep apnoea syndrome and obese people having increasing knowledge score after giving planned teaching.

Keywords: Knowledge, Effectiveness, Obstructive sleep apnoea syndrome, Hypoxia.

Author's Affiliation: Lecturer, Departmment of Medical Surgical Nursing, Sumantai Wasnik Institute Nursing College, Nagpur, Maharashtra 440023 India.

Corresponding Author: Sapna Chandankhede, Lecturer of Medical Surgical Nursing Departmment, Sumantai Wasnik Institute Nursing College, Nagpur, Maharashtra 440023 India.

E-mail: sapnaaa2018@gmail.com

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INTRODUCTION

Obstructive sleep apnoea syndrome is a most common type of sleep apnoea and is caused by complete or partial obstruction of the upper airway. The repetitive episodes of shallow or paused breathing during sleep despite the effort to breathe, and causes a reduction in blood oxygen saturation.[1]

In obstructive sleep apnoea syndrome (OSAS) is a common sleep disorder associated with several adverse health outcomes that give to close association between obstructive sleep apnoea syndrome and obesity and dietary interventions which are commonly recommended to patient, but the evidence for their impact on obstructive sleep apnoea syndrome was not examined.[2]

Obstructive sleep apnoea syndrome adversely affects multiple organ and system, with particular related to the cardiovascular disease. Several condition associated with obstructive sleep apnoea syndrome, such as high blood pressure, insulin resistance, systemic inflammation, visceral fat deposition, and dyslipidemia, are also present in other condition closely related to obstructive sleep apnoea syndrome, such as obesity and reduced sleep duration. Weight loss is related to not only obesity but also to obstructive sleep apnoea syndrome and as well as suggesting that it might be a cornerstone of the treatment of both conditions. This review found that to explore recent development in understanding the interactions between body weight and obstructive sleep apnoea syndrome.[2]

OBJECTIVES

1. To assess the existing knowledge regarding obstructive sleep apnoea syndrome among obese people.
2. To evaluate the effectiveness of planned teaching on knowledge regarding obstructive sleep apnoea syndrome among obese people.
3. To associate the knowledge scores with selected demographic variables.

ASSUMPTION

- Obese people may have some knowledge on obstructive sleep apnoea syndrome.

HYPOTHESIS

H_1: There will be significant difference between knowledge score regarding obstructive sleep apnoea syndrome among obese people.

METHODOLOGY

Research approach: Interventional evaluatory approach

Research design: One group pretest-post test research design.

Setting of study: Selected area of Wardha.

Sample: Obese people

Sample size: 80

Sampling technique: Non probability convenient sampling technique

DISCRIPTION OF TOOLS

- **Section A:** Percentage wise distribution of sample with regards to selected demographic variables.

RESULT

Table 1: Percentage wise distribution of samples with regards to selected demographic variables

n=80

Demographic Variable	Frequency	Percentage (%)
Age (years)		
21-30	22	27.50%
31-40	25	31.25%
41-50	26	32.50%
51 years and above	07	08.75%
Gender		
Male	37	46.25%
Female	43	53.75%
Occupation		
Labor	17	21.25%
Private Job	10	12.50%
Government Job	01	01.25%
Business	12	15.00%
Home Maker	34	42.50%
Other	06	07.50%
Body Mass Index		
25.0-29.9	64	80.00%
30.0-34.9	11	13.75%
35.0-39.9	03	03.75%
Above or equal to 40.0	02	02.50%

- **Section B:** (I) Assessment of existing knowledge regarding obstructive sleep apnoea syndrome among obese people.

Table 2: Assessment of existing knowledge regarding obstructive sleep apnoea syndrome

n=80

Level of knowledge score	Score range	Percentage score	Pre Test	
			Frequency	Percentage
Poor	0-5	0-25%	58	72.5%
Average	6-10	26-50%	22	27.5%
Good	11-15	51-75%	00	00%
Very good	16-20	76-100%	00	00%
Minimum score			03	
Maximum score			08	
Mean score			04.96 ± 1.141	
Mean %			24.8	

II) Assessment of post test knowledge regarding obstructive sleep apnoea syndrome

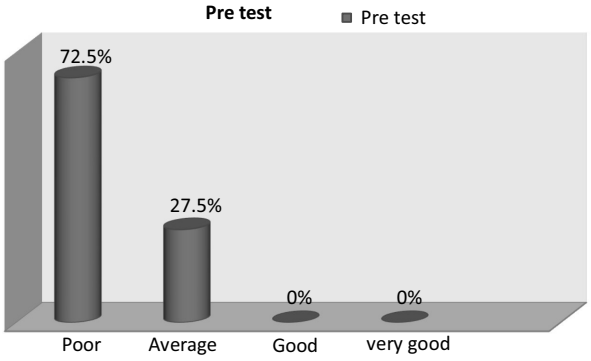

Fig. 1: Knowledge score regarding obstructive sleep apnoea syndrome

Table 3: Assessment of post test knowledge regarding obstructive sleep apnoea syndrome

n=80

Level of knowledge score	Score range	Percentage score	Pre Test	
			Frequency	Percentage
Poor	0-5	0-25%	00	0%
Average	6-10	26-50%	00	0%
Good	11-15	51-75%	76	95%
Very good	16-20	76-100%	04	05%
Minimum score			12	
Maximum score			16	
Mean score			14.25± 0.921	
Mean %			71.25	

- **Section C:** The effectiveness of planned teaching on knowledge regarding obstructive sleep apnoea syndrome among obese people.

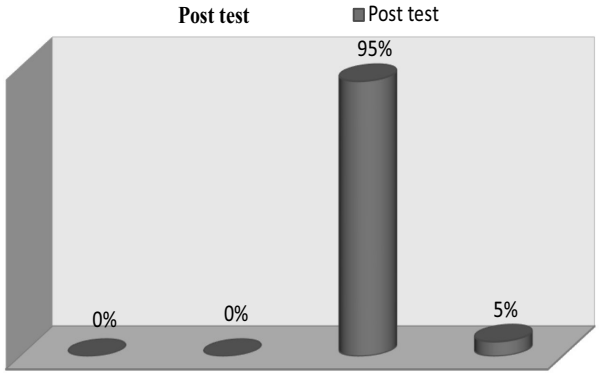

Fig. 2: Knowledge score regarding obstructive sleep apnoea syndrome in Post test

Table 4: Percentage wise distribution of Effectiveness of planned teaching on knowledge regarding obstructive sleep apnoea syndrome among obese people

Tests	Mean score	SD	't'(cal)-value	t'(tab)-value	Degree of Freedom	p-value	Significant
Pre Test	4.96	±1.141	61.927	0.217	79	0.002	S, p<0.05
Post Test	14.25	±0.921					

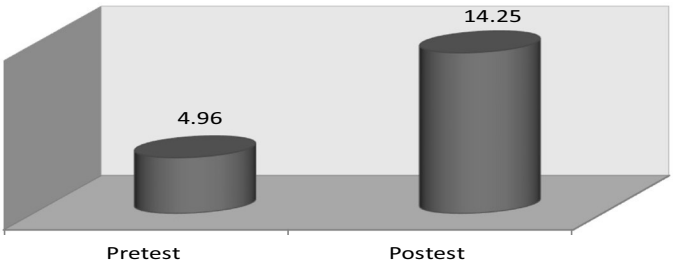

Fig. 3: Percentage wise distribution of Effectiveness of planned teaching on knowledge regarding obstructive sleep apnoea syndrome among obese people

- **Section D:** Association of posttest knowledge score in relation to selected demographic variables.

Table 5: Significance of association of knowledge in relation to age

n=80

Age (yrs)	Frequency	Mean knowledge score	F-value	P value
21-30	22	14.27±0.985	0.183	0.908 NS, p>0.05
31-40	25	14.28±0.843		
41-50	26	14.27±0.827		
51 and above	07	14.00±1.414		

Table 6: Significance of association of knowledge in relation to gender

n=80

Gender	No. of samples	Mean knowledge score	t -value	p-value
Male	37	14.41±0.985	1.409	0.412 NS, p>0.05
Female	43	14.12±0.851		

Table 7: Significance of association of knowledge in relation to occupation

Occupation	No. of samples	Mean knowledge score	F-value	p-value
Labor	17	13.82±0.951	2.168	0.067 NS, p>0.05
Private Job	10	14.20±0.789		
Government Job	01	14.00 ± 0.000		
Business	12	14.92±0.900		
Home Maker	34	14.24±0.923		
Others	06	14.33±0.516		

Table 8: Significance of association of knowledge in relation to body mass index.

Body mass index	No. of samples	Mean knowledge score	F-value	p-value
25.0-29.9	64	14.38±0.826	3.027	0.035 S, p<0.05
30.0-34.9	11	13.73 ±1.191		
35.0-39.9	03	14.33± 1.155		
Above or equal to 40.0	02	13.00±0.000		

Major Findings of the Study and Discussion

- Distribution of obese people according to their age reveals that 27.5% samples were from age group of 21-30 years, 31.25% sample were age group of 31-40 and 32.50% of 41-50 years, and remaining 08.75% were from 51 and above.
- Distribution of obese people according to their sex reveals that 46.25% samples were males and remaining 53.75% were females.
- Distribution of obese people according to their occupation reveals that 21.25% of samples were had labor, 12.50% were had private job, 01.25% were had government job, 15.00% were had business and 42.50% were home maker and 07.50% are other.
- Distribution of obese people according to their body mass index reveals that 80% samples

were from 25.0-29.9 body mass index, 13.75% sample were from 30.0-34.9 and 03.75% of 35.0-39.9, and remaining 02.50% were from 40.0 and above body mass index.

In pre test 58(72.50%) of study participants are having poor knowledge, 22(27.50%) of study participants are having average level of knowledge, none of them had good and very good level of knowledge score. The minimum score was 3 and the maximum score was 8, the mean score was 4.96±1.141 with a mean percentage score of 24.8%.

In post test none of them had poor and average level of knowledge, 76(95%) were having good knowledge, 04(05%) had very good level of knowledge score. The minimum score was 12 and the maximum score was 16, the mean score was 14.25±0.921 with a mean percentage score of 71.25%.

The significant difference between pre test and post test knowledge scores interpreting effective planned teaching on knowledge regarding obstructive sleep apnoea syndrome among obese people. Mean value of pretest is 4.96 and posttest is 24.8 and a standard deviation value of pretest is 1.141 and posttest is 0.921. The calculated t-value is 61.927 and p-value is 0.002. Hence it is statistically interpreted that the planned teaching on knowledge regarding obstructive sleep apnoea syndrome among obese people was effective. Thus the H_1 is accepted.

DISCUSSION

This study reveals that planned teaching on obstructive sleep apnoea syndrome was effective for the obese people. Following are the supporting study that tells us that obstructive sleep apnoea syndrome is serious condition which needs attention and some intervention has to be done to prevent it.

A study conducted on risk factors and treatment for obstructive sleep apnoea syndrome amongst obese children and adults. The purpose of this review is to summarize the evidence for the association between obesity and obstructive sleep apnea syndrome, as well as predisposing risk factors and treatment strategies for OSAS amongst obese patients. In view of recent findings, a direct association between body mass and upper airway obstruction should be viewed with caution. Obesity may play a more significant role in the predisposition to OSAS amongst particular subgroups of the population, such as adults, and those with particular craniofacial and upper airway morphology. Healthcare prioritization and requirements may be more substantial for such groups. Further, commonly used treatment methods for OSAS (such as adenotonsillectomy for children and continuous positive airway pressure for adults) may be less effective for obese individuals. Weight-reduction strategies appear important for an optimal outcome, and such strategies may be more or less invasive depending on the severity of obesity, OSAS or both, and other patient complications.[7]

A study conducted on obstructive sleep apnoea is independently associated with the metabolic syndrome in obese Asian Indians in Northern India. This study investigated the association between OSAS and the metabolic syndrome in obese Asian Indians. They studied 240 obese subjects [body mass index >25 kg/m^2], 121 with OSAS and 119 without OSAS, matched for age, BMI, and percentage body fat (%BF). Full-montage digital polysomnography, fasting blood glucose (FBG), lipid levels, and blood pressure (BP) were done in all subjects. Subjects with OSAS showed higher prevalence of the metabolic syndrome as compared to subjects without OSAS. Prevalence of the metabolic syndrome was significantly higher in the severe OSAS group as compared to the moderate OSAS group. Fasting insulin levels were significantly higher in subjects with OSAS as compared to subjects without OSAS. They suggested that OSAS was independently and positively associated with the metabolic syndrome, male gender, and fasting insulin levels. OSAS is independently associated with the metabolic syndrome in Asian Indians in northern India.[8]

CONCLUSION

Hence it is concluded that planned teaching was found to be effective in improving the knowledge of obese people regarding obstructive sleep apnoea syndrome and obese people have significance increase in their knowledge score after giving planned teaching. Thus is study is found to be effective for the obese people.

Declaration of no Conflict of Interest

The authors of this study declare no conflict of interest in the execution, analysis, or publication of this research. No financial, professional, or personal affiliations influenced the study's outcomes or the structured teaching program's effectiveness.

This research was conducted solely for academic purposes to enhance knowledge and public awareness of dengue fever prevention among adolescents.

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ETHICAL CLEARANCE STATEMENT

This study titled **"To assess the effectiveness of planned teaching on knowledge regarding obstructive sleep apnoea syndrome among obese people"** was conducted with strict adherence to ethical research practices. The research protocol was reviewed and approved by an appropriate institutional ethics committee. Participants were informed about the purpose, procedure, and expected outcomes of the study. Informed consent was obtained from participants and their guardians, ensuring confidentiality and voluntary participation. The study was designed to avoid any physical or psychological harm to participants and followed all ethical guidelines for research involving human subjects.

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