NOCTURNAL EATING SYNDROME: A SIGN OF CAUTION

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ABSTRACT

Nocturnal eating syndrome or Night eating syndrome is disordered eating practices characterized by excessive desire of food consuming at night and is often accompanied by a sleep distraction. This study aims to determine the prevalence of night eating syndrome and its association with quality of sleep and nutritional status. A Quantitative research approach, descriptive study was conducted among 500 adolescents of selected institutes. For data collection Socio demographic questionnaire, Night eating diagnostic questionnaire, Pittsburgh sleep quality index questionnaire, and Nutritional profile index were used. Results represents that out of 500 adolescents Total 45 adolescents had the night eating syndrome, Total 297 adolescents had reported good quality of sleep. A significant association was found between night eating syndrome and quality of sleep. From the study findings it was concluded that there is apparition of maladaptive eating pattern in such tender age and its effects quality of sleep and nutritional status thereby affecting the overall functioning of adolescents.

KEYWORDS : Prevalence, Night Eating Syndrome, Quality of Sleep, Nutritional Status, Adolescents

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INTRODUCTION

Worldwide the prevalence of obesity and overweight has increased among children and adolescents, becoming an epidemic in both developing and developed nations.[1]NES affect both men and women between 1 and 2% of the general population, and approximately 10% of obese individuals. The age of onset is typically in early adulthood (spanning from late teenage years to late twenties) and is often long-lasting, with children rarely reporting NES.[2]

Nocturnal eating syndrome or Night eating syndrome is an abnormal eating pattern with the habits of consuming food after dinner or late night. Night eating syndrome is concerned with the many of health issues like psychosocial impairment, sleep distraction and eating disturbances, psychological issues and reduced quality of life. In addition to eating disorders that are connected to sleep, there are some sleep problems that affect eating practices. Eating disorders also impacts the sleep and interfering with the hormone balances and other disorders.

There are various factors which leads to night eating syndrome in an individual. Night eating syndrome is connected with the addiction of substance like alcohol, tobacco, depression, family environment, genes, mental health, daytime dieting, concern over body image, peer pressure are associated with eating behaviors, both positive as well as negative ways. Individuals with night eating syndrome (NES) often complains about feelings such as lack of control over their eating behaviors, resulting in feelings of guilt and shame related to their condition.

Individuals with night eating syndrome are often obese or overweight, which makes them susceptible to health problems caused by being overweight, including high blood pressure, diabetes and high cholesterol. The nutritional issues in this age group have commonalities with children and adults with some added dimensions

of puberty, psychological changes, and growth spurt which are crucial for current, future and intergeneration health.[3]

In the recent times, there is occurrence of changes in eating patterns of the adolescents .Some choose to eat during night time or after the dinner. These eating patterns affect the quality of sleep. In terms of highlighting and addressing the maladaptive eating patterns of adolescents and its concern with quality of sleep which is the key indicator and predictor of functioning of life.

MATERIALS AND METHODS

Type and design

A Quantitative research approach, Descriptive study was conducted among 500 adolescents from Institutes in this study.

Population and Sample

The study was conducted on adolescents of selected Institutes of Parul University. The sample size for the study was estimated as n=500. By using convenient sampling technique and using inclusion and exclusion criteria adolescents were selected for the study.

Criteria for Selection of Sample:

Inclusion Criteria:

1) Adolescents who are studying in Selected Institutes of University.
2) Those who are willing to participate in the study.

Exclusion Criteria

1) Adolescents of Parul University who were not present at the time of the study.
2) Adolescents who are <16 and >20 years old.

Data collection tool

For data collection, the researchers used total four questionnaires with confirmed validity and reliability. Demographic variables included name, age, gender, religion, education, mother and fathers habits of night eating, emotional factors etc.

Researcher has used night eating diagnostic questionnaire to assess the night eating syndrome. The night eating diagnostic questionnaire comprises 22 questions (often yes/No) and is designed to assess the presence of each of the proposed criteria for diagnosis of NES. The criteria assessed by the NEDQ and the hierarchical scoring method.

Pittsburgh sleep quality index questionnaire was used to assess the quality of sleep the scale has two parts: 19 self rated questions, utilized to rate the scale and five questions rated by a bed partner. Most of the items are organized in multiple choice questions and are brief and easy to understand and answer. The PSQI questions are rated from 0= no difficulty to 3= severe difficulty, generating scores that correspond to the domains of the scale. The nutritional profile index was used to determine the nutritional status, it consist questions regarding background of participants height, weight, BMI and consumption of food per day to identify the nutritional status of the participants.

PLAN FOR DATA ANALYSIS

Descriptive Statistics

- Frequencies and percentages to be used for analysis of demographic characteristics.

Inferential Statistics

- Chi square test was performed to assess the association of night eating syndrome with quality of sleep and nutritional status as well as association of night eating syndrome and quality of sleep with their socio demographic variables.

RESULTS AND DISCUSSION

Table 1: Frequency and percentage distribution of socio-demographic variables Of adolescents

Socio-Demographic Variables		Frequency (f)	Percentage (%)
Age group	16-17 years	2	0.4
	17-18 years	29	5.8
	18-19 years	305	61
	19-20 years	164	32.8

Gender	Male	272	54.4
	Female	228	45.6
Religion	Hindu	431	86.2
	Muslim	55	11
	Sikh	4	0.8
	Others	10	2
Education	Diploma	6	1.2
	UG	459	91.8
	Others	35	7
Fathers have habits of eating after midnight	Yes	74	14.8
	No	426	85.2
Mothers have habits of eating after midnight	Yes	51	10.2
	No	449	88.8
Stress level	Very stressed	60	12
	Stressed	65	13
	Somewhat stressed	243	48.6
	No stress	132	26.4
Does emotional factors make you feel hungry	Yes	213	42.6
	No	287	57.4
Sleep Hours	< 5	33	6.6
	5-6	149	29.8
	6-7	247	49.4
	>.7	71	14.2
Physical Activity level	Sedentary	11	2.2
	Lightly active	165	33
	Moderately active	207	41.4
	Very active	117	23.4
Attempted weight loss during past year	Yes	187	37.4
	No	313	62.6

Table 1 shows the frequency and distribution of demographic characteristics of adolescents reveals that according to their age, majority 305 (61%) were in 18-19 years of age, followed by 164(32.8%) were in 19-20 years of age, 29(5.8%) were in 17-18 years of age and 2(0.4%) were in 16-17 years of age.

Regarding gender of adolescents maximum 272(54.5%) were male and 228(45.6%) were female. majority 431(86.2%) belongs to hindu, 55(11%) belongs to muslim, 10(2%) belongs to other religion and 4(0.l8%) belongs to sikh religion.

In terms of education of adolescents, maximum 459(91.8%) were educated up to UG, followed by 35(7%) had other education and 6(1.2%) had diploma.

Regarding father's habits of eating after midnight, 426(85.2%) had no habits of eating after midnight and 74(14.8%) respondent reported that there father had habit of eating after midnight. With regard to mother's habits of eating after midnight, 449(88.8%) had no habits of eating after midnight and 51(10.2%) mothers had habits of eating after midnight.

According to stress level of adolescents, maximum 243(48.6%) had reported some what stressed, 132(26.4%) had no stress, 65(13%) had stressed and 60(12%) had reported very stressed.

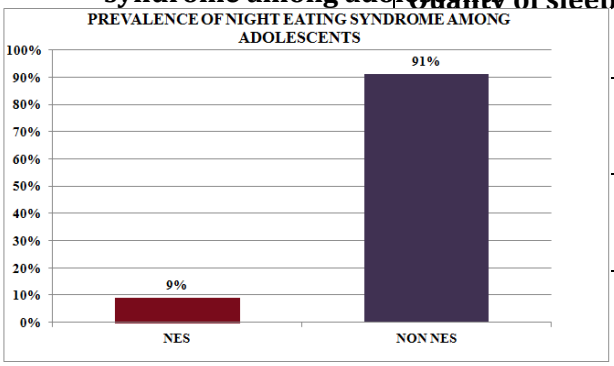
Regarding does emotional factors make you feel hungry, majority 287(57.4%) had reported emotional factors do not make you feel hungry and 213(42.6%) had emotional factors make you feel hungry.

According to sleep hours of adolescents, maximum 247(49.4%) had 6-7 hours of sleep, 149(29.8%) had 5-6 hours of sleep, 71(14.2%) had above 7 hours of sleep and 33(6.6%) had less than 5 hours of sleep.

Regarding physical activity level of adolescents, majority 207(41.4%) had moderate physical activity, 165(33%) had lightly physical activity, 117(23.4%) were very active and 11(2.2%) had sedentary physical activity.

With regard to attempted weight loss during past year among adolescents, maximum 313(62.6%) had not attempted for weight loss and 187(37.4%) had attempted for weight loss during past year.

Figure 1: Frequency and percentage distribution of prevalence of night eating syndrome among adolescents



Bar diagram represents the frequency and percentage distribution of prevalence of night eating syndrome among adolescents. Result showed that prevalence of night eating syndrome was 45(9%) among adolescents and 455(91%) had no night eating syndrome. The overall prevalence rate of NES in a population of 3000 adolescents was found to be 1.5%

Table 2: Frequency and percentage distribution of quality of sleep among adolescents

Quality of sleep	Frequency (f)	percentage (%)	Score range	Median	Mean
	203	40.6 %	3-18 15	8	7.96
	297	59.4 %			

Table 2 depicts the frequency and percentage distribution of quality of sleep among adolescents. Result showed that maximum 297(59.4%) had good quality of sleep and 203(40.6%) had poor quality of sleep.

Table 3: Association of Night Eating Syndrome on Quality of Sleep among Adolescents

Prevalence of NES	Quality of sleep		χ2 value	df	p value
	Poor	Good			
NES	11	34	5.352	1	**0.021***
NON NES	192	263			

Table 3 illustrates the association of night eating syndrome on quality of sleep among adolescents which was tested by using chi-square test. Result showed that **($\chi 2=5.352, df=1, P=0.021$)** indicate night eating syndrome was found statistically significant association with quality of sleep among adolescents and was found significant at $p<0.05$ level of significance. This indicates a strong presence of poor sleep quality in NES.

In view of association with socio demographic variable, the association of night eating syndrome among adolescents with their selected socio-demographic variables which was tested by using chi-square test. Result showed that physical activity level of adolescents was statistically significant associated at $p<0.05$ level of significance with night eating syndrome. significant association of night eating syndrome and physical activity level indicates link between physical activity and diet, opening the possibility that engagement in higher levels of physical activity may influence the amount and quality of dietary intake or vice versa. Association of quality of sleep on stress level was statistically significant associated at $p<0.05$ level of significance with night eating syndrome. Significant association of quality of sleep and

stress level indicates stress and sleep are closely linked. Stress can adversely affect sleep quality and duration, while insufficient sleep can increase stress levels. Both stress and a lack of sleep may contribute to night eating syndrome.

DISCUSSION

The study findings presents that the out of 500 adolescents of selected institutes 45 (9%) adolescents had the night eating syndrome. maximum 297 (59.4 %) adolescents had good quality of sleep. The night eating syndrome was found statistically significant associated with the quality of sleep and the nutritional status was found statistically non significant with the night eating syndrome. There was significant association of night eating syndrome with the socio demographic variable includes physical activity level. There was significant association of quality of sleep with the socio demographic variable includes stress level.

The study conducted by **Can oner.et.al (2018)** on night eating syndrome in adolescents. Total 179 university students (17 male, 162 female) were enrolled to this cross-sectional study. Result shows that all descriptive statistics were reported as mean±SD. p values < 0.05 were considered as statistically significant. Nineteen participants (10.6%) met the criteria of NES. There were no significant differences between NES and non-NES groups with respect to gender, age or Body Mass Index (BMI). Also, there was no correlation between BMI and NEQ points of participants (r=0.03; p=0.690).[4]

The study conducted by **Yon oi Kwin (2021)** on Night Eating Syndrome and Its Association with Sleep Quality and Body Mass Index Among University Students During the Covid-19. The results showed that 38.6% of the participants were engaging with NES, 45.2% were having poor sleep quality and 25.9% were overweight or obese during the Covid-19. There were significant associations between NES with sleep quality and BMI, which students with NES were found to have poorer sleep quality (r=0.306, p<0.001) and higher BMI (r=0.024, p=0.763).[5]

CONCLUSION

With this representation it can be inferred that 368(73.6%) students had experienced stress recently and 213(42.6%) adolescents were emotional eaters that establishes a moderate tie or link of finding comfort in eating while stress. night eating syndrome and physical activity level are interrelated which indicates link between physical activity and diet, opening the possibility that engagement in higher levels of physical activity may influence the amount and quality of dietary intake or vice versa. stress level of the adolescents also affects the quality of sleep which indicates stress and sleep are closely linked. Stress can adversely affect sleep quality and duration, while insufficient sleep can increase stress levels. Both stress and a lack of sleep may contribute to night eating syndrome. From the study findings it was concluded that there is apparition of maladaptive eating pattern in such tender age and its effects quality of sleep and nutritional status thereby affecting the overall functioning of adolescents. Also it was found that some specific factors including stress level and physical activity, short sleep, missed meals make adolescents night eaters. This research indicates the importance of awareness regarding healthy eating is needed to preserve and secure the health of youth.

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ETHICAL APPROVAL

The ethical approval was taken from the Parul University institutional ethical committee for human research (PUIECHR/PIMSR/00/081734/3708), Limda, Vadodara and expert of the committee approved the study

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CONFLICT OF INTEREST

Authors have declared that no conflict of interests exists.

RECOMMENDATIONS

On the basis of the study findings the following recommendations have been made:

- A similar study can be undertaken on a larger sample scattered over a wide geographical area for exploring the concept in detail.
- A comparative study can be done between adolescents and other age group regarding night eating syndrome.
- A comparative study can be done between two genders females and males.
- Further studies can also be done on other eating disorder and its effect on the adolescents.
- Longitudinal Studies can be conducted that measures the transition of adolescents growth and eating patterns over a period of time
- Qualitative research to unwind the cultural pattern and it's affect on night eating syndrome can be done.

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