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RESEARCH ARTICLE

A STUDY INVESTIGATING THE PREVALENCE OF OBESITY AMONG EMPLOYEES OF A PRIVATE EDUCATIONAL INSTITUTION IN WEST BENGAL

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Abstract

Background: Body Mass Index (BMI) is a useful indicator to measure whether a person is underweight, overweight, or obese.Overweight and obesity are the key risk factors for chronic Non-Communicable Diseases (NCDs) such as hypertension, hyperlipidemia, type 2 diabetes mellitus, cardiovascular disease, metabolic syndrome, high cholesterol levels, and cancer.Objective was to determine the prevalence of obesity among Employees of a Private Educational Institution in West Bengal.

Method: The present study has been undertaken among Employees of a Private Educational Institution in West Bengal, in which all the employees were interviewed by a predesigned, pretested and pre-validated structure questionnaire though a health camp organized by the institute. Anthropometric data regarding height and weight was taken. Data were collected and analysed using statistical software and Chi-square and other statistical tests were used.

Results: The study shows that among total 162 employees. 24 (24.48%) male and 29 (45.31%) females were found overweight or obese with the criteria of BMI more than 25kg/m^2.

Conclusions: It was concluded that obesity is a chronic illness. Early identification and appropriate intervention could prevent various complications associated with it. The BMI is an important factor.

Introduction:-

Obesity is a persistent complex infection characterized by intemperate fat stores that can hurt wellbeing. Weight can increment the chance of sort 2 diabetes and heart illness, it can influence bone wellbeing and propagation, it increments the chance of certain cancers.

Obesity is the most dismissed open wellbeing issue that is heightening all inclusive, incomprehensibly coexisting with undernutrition, with millions at hazard of genuine wellbeing clutters. It influences all ages and financial bunches and is not constrained to created nations. Quick activity is required to address this complex condition through social and mental measurements. It is properly alluded to as “Globesity”, as it has risen as a worldwide non-communicable epidemic.[1]

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According to World Wellbeing Organization in 2022, 2.5 billion grown-ups matured 18 a long time and more seasoned were overweight, counting over 890 million grown-ups who were living with corpulence. This compares to 43% of grown-ups matured 18 a long time and over (43% of men and 44% of ladies) who were overweight; an increment from 1990, when 25% of grown-ups matured 18 a long time and over were overweight. Predominance of overweight changed by locale, from 31% in the WHO South-East Asia Locale and the African Locale to 67% in the Locale of the Americas.

About 16% of grown-ups matured 18 a long time and more seasoned around the world were corpulent in 2022. The around the world predominance of weight more than multiplied between 1990 and 2022.[2] According to National Family Wellbeing Survey-5 (NFHS-5) in India overweight and weight are higher in urban regions than in provincial ranges and more common in ladies. A 24.0% of ladies (33.2% in urban and 19.7% in provincial) and 22.9% of men (29.8% in urban and 19.3% in country) are overweight or obese.3 Concurring to National Family Wellbeing Survey-5 (NFHS-5) 22.7 % ladies (27.9% in urban and 20.3% in provincial) and 16.2% men (20.0% in urban and 14.5% in country) are overweight and stout in West Bengal.[4]

Metabolic clutters, hereditary varieties, and obesogenic environment are a few of the different variables that contribute to weight. Variables such as restricted get to to sound nourishment, need of secure physical portability, and insufficient legitimate and administrative situations contribute to corpulence. The need of compelling wellbeing framework reaction to early weight picks up and fat testimony moreover compounds the movement.[3]

Methods:-

The present study has been undertaken in all the employees of The Institute of Leadership, Entrepreneurship and Development (iLEAD), Kolkata. In the college there are 20 departments of the teaching discipline as Media Science, Animation, Flim and Television, Interior Design, Fashion, BBA, Hospital Management, Digital Marketing, Entrepreneurship, Travel and Tourism, Sports Management, Critical Care, Medical Lab Technology, Optometry, Data Science, Cyber Security and BCA. There is administrative staff of the college in various sub sections as- accounts, admission council, library, students' section UG and PG, and inward and outward section of the college. The campus has more than 1600 students and 162 staff members. It was a descriptive cross-sectional point prevalence study done on April 5th, 2024 on a health camp organized by the School of Allied Health Science department of the institute. Oral consent was obtained from the head of the departments, explaining the nature and purpose of the study. Informed consent to participate in the study was obtained from each before the questionnaire questions and the necessary measurements of obesity. All questions were done in series. And their answers were recorded simultaneously. A pre-planned, pre-validated and pre-tested interview-based questionnaire was used to collect data from the various participants. The questionnaire included general information such as age, gender, marital status, family type, education, religion and socioeconomic status. Anthropometric measurements were taken, viz. height and weight were recorded using standard equipment and methods. A tape measure was used to measure height to the closest centimeter. Without shoes, participants were instructed to stand straight, place their backs against walls, bring their heels together, and look forward. Weight was measured using a spring balance held on a stable and flat horizontal surface. Subjects wore light clothing, stood without shoes, and weight was recorded to the nearest 0.5 kg. The balance has been calibrated with standard weights. BMI is a measure of a person's thinness or corpulence based on their height and weight and is intended to quantify tissue mass. It is often used as a general indicator of whether a person has a healthy body weight in relation to their height. To be more precise, the BMI value determines a person's classification as underweight, normal weight, overweight, or obese based on where in the range the value falls. These BMI ranges vary by region and age and are sometimes further broken down into subcategories such as severely underweight or very severely obese. Being overweight or underweight can have significant effects on health. While BMI is an imperfect measure of a healthy body weight, it is a useful indicator of whether additional testing or intervention is needed.[5] BMI was calculated from the above measurements using the formula-BMI=weight kg/height in m^2. The WHO BMI classification was used as following:

- Underweight: BMI < 18.50 Kg/m^2
- Normal Range: BMI 18.5-24.99 Kg/m^2
- Overweight: BMI 25.00-29.99 Kg/m^2
- Obesity: BMI 30.00 and above Kg/m^2

Also, BMI prime is the ratio of a person's measured BMI to the upper limit of BMI considered "normal" by institutions such as the WHO and the CDC. However, it may be different in some countries. BMI Prime was calculated from the above measurements using the formula, though it may differ in some countries, such as those in Asia, this upper limit, which will be referred to as BMI_{upper} is 25 kg/m^2.The BMI prime formula is:

$$\text{BMI prime} = \frac{\text{BMI}(m^{2})}{25}$$

Results:-

As shown in Table 1, the total number of participants were 162, in which 98(60.49%) were male and 64(39.50%) were females. The maximum percentage of the employees was in the age group of 25-34 years among both male and females i.e. 34.69% and 65.63% respectively. Table 2 shows the various socio-demographic features of the participants. In the present study, the BMI of the study participants was classified according to WHO classification. Table 3 shows, overall prevalence of overweight and obesity in both the sexes was seen in 24 (24.48%) male and 29 (45.31%) females were found overweight and obese with the criteria of BMI more than 25kg/m^2 and there is gender wise significant difference. Chart 1 shows, the status of BMI of participants in each category.

Table 1:- Showing the age and sex distribution of the participants.

Variables	Males (N =98) No. (%)	Female (N=64) No. (%)	Total (N=162) No. (%)	Chi Square Value	
Type of Family					
Nuclear	91(92.85)	59(92.18)	150(92.59)	χ^2	0.025
Joint	7(7.14)	5(7.81)	12(7.40)	df	1
				p value	0.8735
Religion					
Hindu	89(90.81)	60(93.75)	149(91.97)	χ^2	0.451
Muslim	9(9.18)	4(6.25)	13(8.02)	df	1
				p value	0.5016
Marital Status					
Unmarried	26(26.53)	18(28.12)	44(27.16)	χ^2	3.219
Married	72(73.46)	44(68.75)	116(71.60)	df	2
Widower	0(0.00)	2(3.125)	2(1.23)	p value	0.1999
Educational Status					
Primary	4(4.08)	3(4.68)	7(4.32)	χ^2	0.405
Middle	2(2.04)	1(1.56)	3(1.85)	df	5
Higher Secondary	4(4.08)	2(3.13)	6(3.70)	p value	0.9951
Graduate	9(9.18)	5(7.81)	14(8.64)		
Postgraduate	75(76.53)	51(79.68)	126(77.77)		
Ph.D	4(4.08)	2(3.12)	6(3.70)		

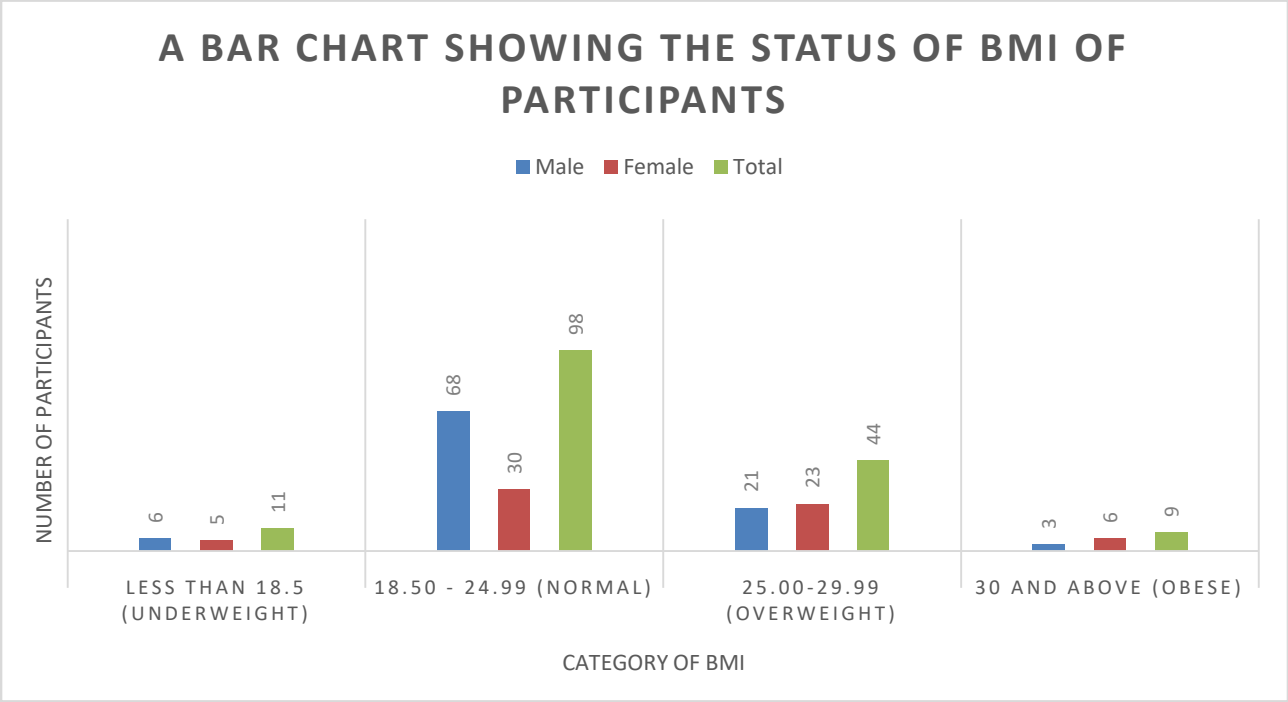
Table 2:- Showing the socio-demographic profile of the participants.

Age in Yrs	Total No. of Males		Total No. of Females		Total No. of Participants	
	No	%	No	%	No	%
25-34	34	34.69	42	65.63	76	46.91
35-44	42	42.85	10	15.62	52	32.09
45-54	15	15.3	8	12.5	23	14.19
55 and above	7	7.14	4	6.25	11	6.79
Total	98	100	64	100	162	100

Table 3:- Showing the status of BMI of the Participants.

BMI (Kg/m$^{2)}$	BMI Prime	Category	Males (N =98) No. (%)	Female (N=64) No. (%)	Total (N=162) No. (%)	Chi Square Value
Less than 18.5	0.64 - 0.74	Underweight	6(6.12)	5(7.81)	11(6.79)	χ^2 – 9.1853
18.50-24.99	0.74 - 1	Healthy weight/ Normal	68(69.38)	30(46.87)	98(60.49)	df - 3
25.00-29.99	1 - 1.2	Overweight	21(21.42)	23(35.93)	44(27.16)	p value - 0.0269
30 and above	1.2- 1.4	Obese	3(3.06)	6(9.37)	9(5.55)	

Chart 1:-



Discussion:-

A total of 162 employees were included as study participants. In the present study the overweight and obesity was seen in 24 (24.48%) male and 29 (45.31%) females with the criteria of BMI more than 25kg/m^2 (table 3).

In a study done at Dehradun by Saxena et al, the prevalence of obesity (BMI >25kg/m^2) was 9.5 % in males and 18.9% in females which shows that prevalence of obesity among females was approximately double than in the males. the finding is similar to the present study.[6]

The prevalence of obesity in the study of Nigeria was 9.1% and that of overweight was 26.2%. It was more prevalent in females than males and also more prevalent in the younger age group than the older age group.it is similar to the present study.[7]

Another study done by Mahore R et al, which shows that 21.21% males and 42% female was overweight and obesity with the criteria of BMI >25 Kg/m^2. In this context also, it is similar to the present study.[8]

Conclusion:-

The current study concludes that overweight and obesity are fairly common among employees of both sexes, it was more prevalent in females than males. BMI is an easy and reliable screening tool to stop the disease's progression and related problems. Obesity is a problem because of sedentary work and aging populations.

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Declarations

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Conflict of intrigued:

None announced.

Ethical endorsement:

The consider was affirmed by the Organization Morals Committee.

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