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Association between Body Mass Index and Dietary Factors among University Students

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Abstract: Obesity in youth population is very important to prevent which is major risk of cardiovascular diseases and other chronic disease. Change in lifestyle, lack of nutrition and lack of activity core factor of increases body mass index. The present study was done to study the correlation between body mass index and core dietary factors among university students. The study included determining the body mass index with measurement of height and weight among university students who were selected randomly, Data collection was done through a questionnaires cum interview method and statistical analysis of that study shows positive strong significant (.000) Pearson correlation between body mass index with fat intake and physical activity with extra NAR fat intake 1.34 and fairly adequate NAR 0.71 of energy CHO intake 0.77 fairly adequate. The problem of increases overweight in youth population with inadequate nutrients. Their body mass index have positive strong relation with core dietary factor and lifestyle therefore there is an urgent need to change lifestyle pattern as well as physical activity to prevent chronic disease.

Keywords: Body mass index, lifestyle, dietary habits.

I. INTRODUCTION

Obesity and over- weight are usually rising factor of disease, in India obesity developing many chronic problems.(2) All studies shows that body mass index is straight relation with diabetes and chronic diseases(3) The obesity definition given by World Health Organization and International obesity task force is in terms of body mass index. BMI is a simple index of weight for height and indirectly method of measured overweight and obesity, which is adopted for use in all age groups by World Health Organization (WHO). BMI measure derived from dividing of body weight by square of height in meters(4) Considered normal range of Body mass index 18-25 and range of obesity is above 30.

Obesity defined as excess gathering of fat in the body and increasing weight further on observed with estimation to age, height and bone structure and seen increase body weight. This fat distribution occurs in conflicting adipose tissues.(5) which increase leptin and Angiotensinogen it's cause cardiovascular disease, high blood pressure and other chronic disease.(6) Obesity is most common risk factor of developing hypertension. There are correlation defined that hypertension common in higher body mass index population. Globally increased BMI leads to 13percnt and 21 percent of population suffering from developed blood pressure and heart disease, all the following disease like diabetes, osteoporosis problem and other chronic diseases are caused due to obesity.(7) In youth population foremost elimination of high blood pressure a Generally over-weight has high blood pressure more then compare to normal person. In India due to inadequate life style and lack of knowledge many student are now suffering from overweight and obesity.(7,1) According to related study BMI may be due to the change in lifestyle, fast food, rather than nutritious and healthy meal. Increasing weight with the lifestyle changes for example stress, playing video game, excess usage of laptop and computers, inadequate nutritious diet lack of physical activity and society environment also influence on the food habits, which responsible for increasing blood pressure and BMI. The inadequate life style for consumption of drugs and alcohol, smoking also a big reason of hypertension.(8,9)so this study focus on youth population for control weight and prevention of hypertension and other chronic disease.

II. METHODOLOGY

This study composed of 50 male and 50 female with 18-25 age group selected randomly. The BMI is standardized estimate of an individual's body fat calculated from his or her Height and Weight. Participants height measured in meter(m) and the weight measured in kilograms(kg). BMI determine the ratio of weight in kilograms to square of height in meter.

BMI = Weight (kg) / Height (m^2)

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Interview schedule was prepared with the help of questionnaire, which composed of anthropometric measurement, medical history, physical activity, lifestyle pattern and 24 hour dietary recall. After data collection analysis was execute use of SPSS software with the correlate bivariae analysis that measures association of body mass index with 24 hour dietary recall. The intake of nutrients was calculated taking the mean of the 24 hour dietary intake Nutrient adequacy ratio calculated for the cross examine of nutrients intake of the subjects.

III. RESULTS AND DISCUSSION

The study revealed that the Out of 100 participates, the mean average age of the participates was 21.38±2.2282, the average BMI of the total population was 24.842±4.3837 Table 1 the nutrition intake of subjects according to 24hour dietary recall. The mean and standard deviation for energy (kcal) was found to be 1922.6±2997.95 with mean NAR of 0.79 falling in the category of fairly adequate NAR. For protein mean ± SD 52.15762±11.80694 which was found to be falling in the category of intake type of fairly adequate NAR. Mean ± SD for fat (gm) was 28.86312±8.318582 with mean NAR of 1.44 in the intake type of extra NAR. Carbohydrate (gm) was 231.8053±76.11715 with mean NAR of 0.77 in the intake type of fairly adequate NAR. there was high correlation between the two factors as the significance factor determine from the SPSS statistical analysis is less than 0.05 which suggest that it is highly significant.

Table 1- Nutrient adequacy ratio of nutrient intake.

Variable	RDA	Mean ±SD	MEANNAR	Intake type
Energy(kcal)	2425	1922.6±2997.95	0.79	Fairly adequate NAR
Protein(gm)	60	52.15762±11.80694	0.86	Fairly adequate NAR
Fat(gm)	20	28.86312±8.318582	1.44	Extra NAR
CHO(gm)	300	231.8053±76.11715	0.77	Fairly adequate

Table 2- Association between Body mass index and 24 hour Dietary factors.

		BMI	ENERGY	FAT	CHO
BMI	Pearson Correlation	1	.100	.462**	.374**
	Sig. (2-tailed)	-	.323	.000	.000

Table 3-core dietary pattern

Variable	Daily	Once a week	Twice a week	Thrice a week	Never
Going to canteen	30%	21%	20%	29%	-
Soft drink	8%	44%	25%	19%	4%
Sweets& chocolates	16%	32%	27%	23%	2%
Fried food	30%	21%	20%	29%	-
Fruits juice	18%	38%	29%	16%	1%
Fruits&vegetable	70%	9%	9%	12%	2%

IV. CONCLUSION

The Study was observed that there was a positive correlation between body mass index and dietary intake, when fast food intake increase than increase the body mass index. The study observed the consumption pattern of students and their effect on quality of health and majority(30%) of subjects went to canteen regularly and consumed fried food, soft drink and chocolates and consumed fatty food only few (16%) cases never consumed sweets and chocolates on daily basis. Inadequate food intake increased body fat and obesity which cause of hypertension and other chronic disease. According to inadequate lifestyle large number (54%) of subjects skip their breakfast majority (44%) of subjects considered lunch as a main meal of the day but not all subjects think about breakfast as a main meal, it was the main reason for skipping breakfast which affects their health status. On the basis of 24 hour dietary recall, mean nutrient intake was calculated and the energy, carbohydrate and protein fall in the category of fairly adequate

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nutrient adequacy ratio and fat in the category of extra NAR. In conclusion of study there were positive strong relationship with physical activity the students who were overweight and have less activity level. There was significant positive Pearson correlation (0.00) of BMI with FAT and CHO. When fatty food or fast food intake increases then the body weight also increases which is the risk factor of hypertension. it was found that majority of overweight and obese subjects consumed extra fat and CHO in their diet. Reporting bias first limitation of the study as did not provided correct information. Energy intake was poor fairly adequate which may be reason of non significant. Increases Body Mass Index with lack of knowledge, inadequate lifestyle and consumption of more fried food. So the study was give advance notice to student for prevention of chronic problem and to provided information for maintained their body weight according to BMI normal range, with help of lifestyle modification.

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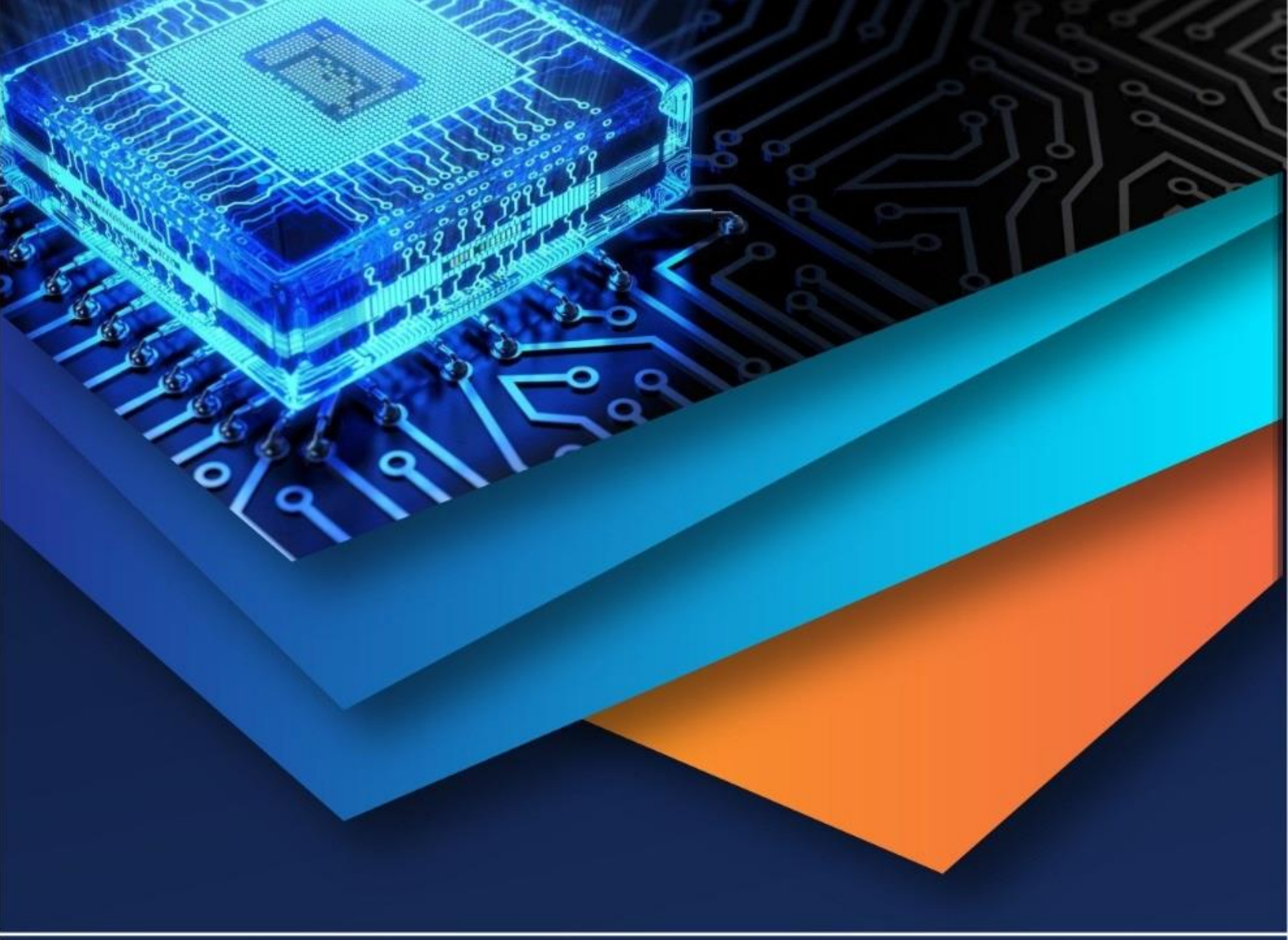

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