Association of Eating Habits and Body Weight Status Among the Undergraduate Trainees at a Rural Teaching Hospital.

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ABSTRACT

Background: Obesity is inextricably linked with environmental, sociocultural and behavioural aspects. The present study was conducted to examine the dietary pattern among the selected undergraduate diet interns in relation to overweight and obesity

Aim: To determine the association of dietary pattern with the BMI (Body Mass Index) among undergraduate diet interns at a rural teaching hospital.

Material and methods: A Cross-sectional study was conducted involving 70 undergraduate interns using self-reported questionnaire

Results: The mean age of participants was 20.67± 0.82, Out of 70 participants, 12.8% and 18.5% were found overweight and obese respectively. A significant association was found between processed/fried foods with the high indices of BMI.

Conclusion: Our findings suggested that dietary patterns high in processed foods and fried foods is associated with higher indices of obesity.

Key Words: BMI, Dietary Pattern, Obesity

INTRODUCTION

Obesity is one of the most neglected and pervasive health problems worldwide affecting all ages, socioeconomic classes and ethnicities. It is rightly called as "Globesity" as it is a global non-communicable epidemic. Obesity has been defined as "abnormal and excessive deposition of adipose tissue to the extent the health may be adversely affected" and it is fifth leading cause of death all over the world1, 2. It has been seen that developing countries like India are

encountering a dual burden of under-nutrition and overnutrition3. Commencing college is often associated with students having more autonomy over their dietary choices. Students may not consider the risk of developing chronic diseases when making food choices. Factors such as cost, skipping meals, inadequate variety of foods, snacking, and frequent consumption of fast foods may increase students' risk of poor health4. Stockton and Baker had warned that college students' knowledge of nutrition does not always correlate with their eating habits because they consumed large amounts of fast food even though they acknowledge it is unhealthy (10).

Studies have reported that considerable weight gain occurs during college/university. The associated food selection skills and habits have long-term health impacts. Feasibility is one of the major factors associated with unhealthy eating habits. Many social interactions are centered around food, perhaps due to food's innate preoccupation in human physiology and psychology. However, if a food does not appeal to one's sense of taste, that person is not likely to eat it, regardless of nutritional value or cost. Several studies have assessed the influence of taste on food choices and reported it as the most influential factor on food consumption .However, there is scarcity of researches regarding nutritional status in college students in western India, therefore, this study had been planned to know the relation of the dietary habits and overweight and obesity in under-graduate diet interns, who wish to pursue their career in the field of nutrition and dietetics.

MATERIALS AND METHODS

A cross-sectional study was conducted in the campus of Sumandeep Vidyapeeth, Vadodara wherein undergraduate diet interns (n=70) were selected through purposive sampling. Self-reported questionnaires including food frequency table and anthropometric measurements were used for data collection. Anthropometric measurements included height and weight, based on which their BMI was calculated. Informed consent was taken from the students.

Weight was measured by weight balance with minimal clothing. For the measurement of height, students were asked to take off their shoes and stand straight with the head in a Frankfurt plane, feet together; knees straight, and heels, buttocks, and shoulder blades in contact with the vertical surface of the scale. Body mass index (BMI) was calculated as a ratio of weight in kilogram to height in meter square. According to Asia Pacific Classification, it was classified as underweight (BMI < 18.5), normal (BMI = 18.5-22.9), overweight (BMI = 23-24.9), Obese (BMI ≥ 25).

Statistical analysis

Data were cleaned, validated and analyzed in Microsoft Excel 2013. Continuous variables were expressed as mean±standard deviation and categorical variables as proportion and percentage. Univariate analyses were done by chi-square test. Differences were considered statistically significant at p value < 0.05.

RESULTS AND DISCUSSION

A total of 70 undergraduate diet interns with an average age of 20.67± 0.82 years participated in the study. The family history of type 2 diabetes, hypertension and obesity is depicted in Figure 1. The mean height, weight and BMI were 160 ± 6.77, 55.5 ± 16.6, 21.3 ± 3.6 respectively (table 1). Figure 2 depicts the prevalence of obesity in students in terms of BMI. Our results showed that 44% of students were having normal BMI (18.5-22.9). Overweight students represented 12.8%. The study conducted by Chhabra et al found that the prevalence of overweight in medical students residing in Delhi was 11.7%.

Regarding the intake pattern of healthy food items, it was found that 68.5% of the participants consumed milk and milk products daily, 13% of them consumed fruits on a daily basis (Figure 2). Similar study supported that 74% of college students eat less than the recommended five servings of fruits and vegetables. (6) A review from the National Health and Nutrition Examination Study (NHANES) found that only 0.9% of adolescents met their dietary guidelines for fruits and vegetables. About 40% and 22.9% consumed egg and meat respectively once a week. About 52% of subjects consumed sprouts weekly and only 2.9% of girls were having sprouts daily. Daily intake of salad was found to be only 38.6% in subjects. About 40% of the subjects were having dry fruits daily (Figure 3).

Figure 4 reveals that about 41.4% of the subjects were consuming pizza, burger and pasta once a week. Majority of the subjects (48.6%) were having instant noodles once a week. About 8.6% of the subjects consumed wafers and 24.3% consumed chocolates daily. More than half of the total subjects (54.2%) were having ice-cream every week (Figure 5). A study by Prof. A. H. Sequeira et al revealed that the trend of replacing regular meals with junk food was nearly 75-80 percent in students consuming it often (7).

Our study showed that about 41.4% of the subjects were consuming pizza, burger and pasta once a week. Majority of the subjects (48.6%) were having instant noodles once a week. On the contrary, Sam Abraham et al. revealed in their study that the majority of the students (85%) rarely consume fast foods (8). Brown et al. discovered that college students often select food from vending machines according to convenience, taste, time, and price instead of nutritional values (9).

Table 1: Characteristics of the participants (mean ± SD)

Variables	Mean ± S.D.	Range
Age (in completed years)	20.67± 0.82	19-23
Height (in centimeters.)	160 ± 6.77	147-175
Weight (in kilograms)	55.5 ± 16.6	35-79
Body Mass Index (kg/m²)	21.3 ± 3.6	14.5-32

Figure 1: Percentage of subjects having family history of NCDs

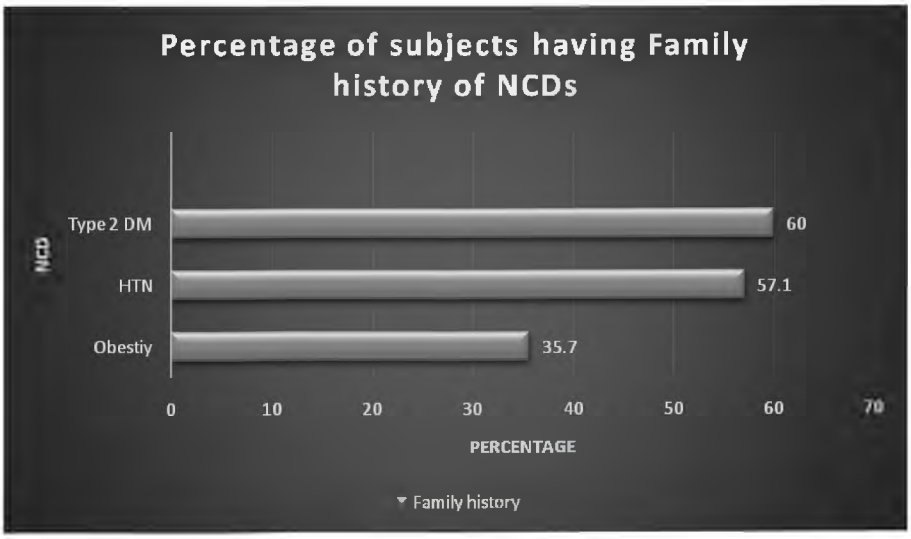


Figure 2: Distribution of subjects according to BMI

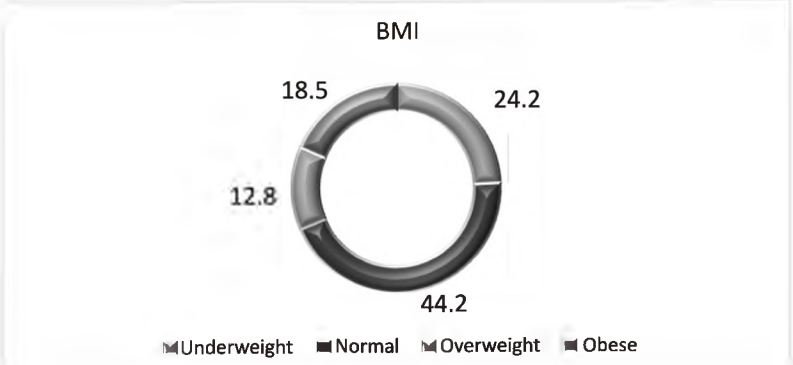


Table 2: No of Subjects Consuming Samosa/Patties/Bhajiya N=70

Frequency of Consumption					
Subjects (n=70)	< 7 days	> 7 days	Chi - square	P value	Degree of freedom
Overweight/ obese (n=22)	13	37	3.96	0.04*	1
Non- obese (n = 48)	11	11			

Table 3: Processed Foods Consumption among Study Group (N=70)

Frequency of Processed Food Consumption					
Subjects (n=70)	< 7 days	> 7 days	Chi - square	P value	Degree of freedom
Overweight/ obese (n=22)	11	37	8.7	0.003**	1
Non- obese (n = 48)	13	9			

Figure: 2 Consumption pattern of Items from Different Food Groups

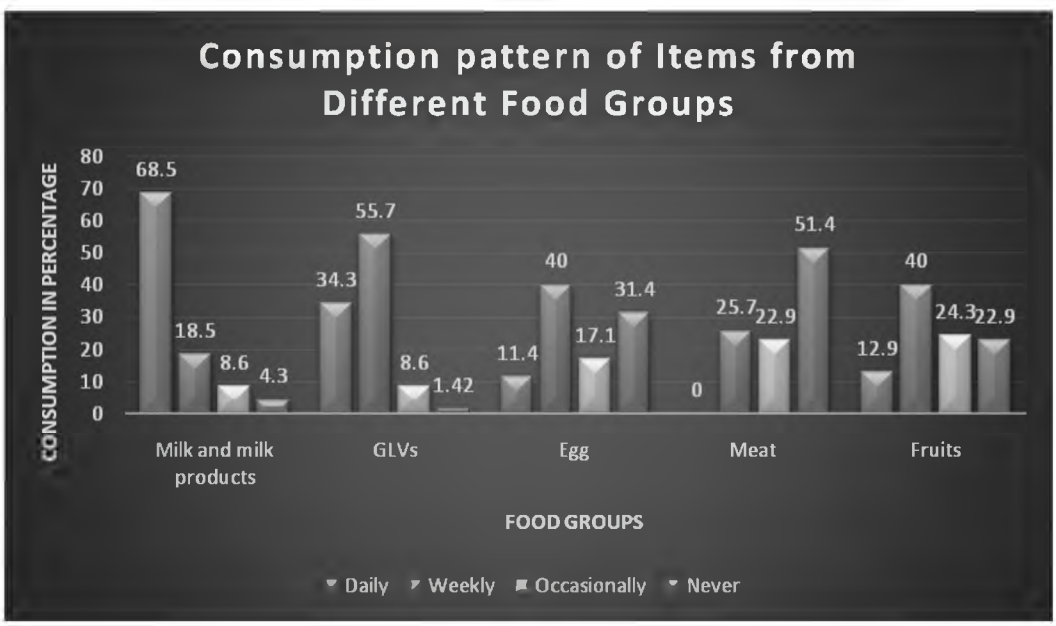


Figure 3: Consumption pattern of sprouts, salad and dry fruits by the subjects

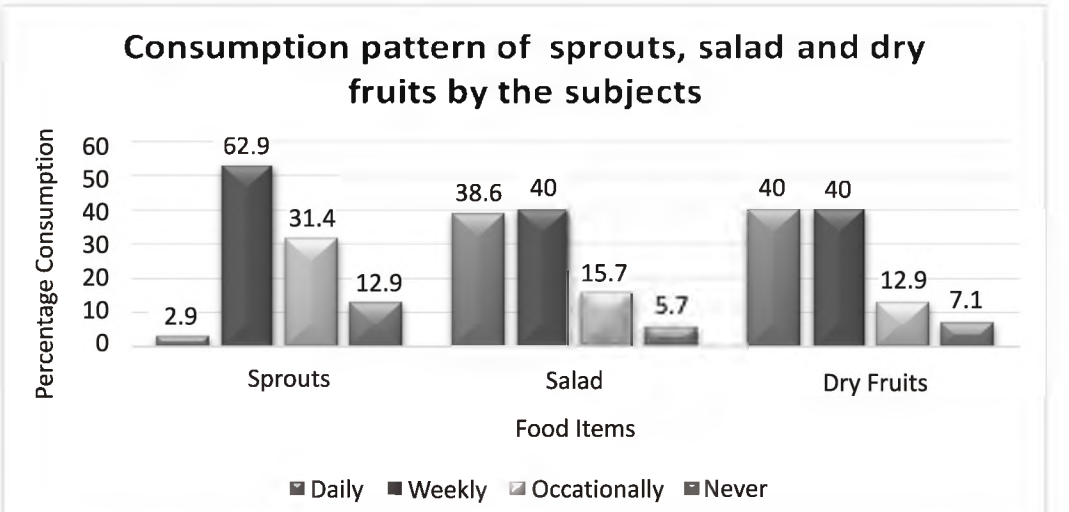
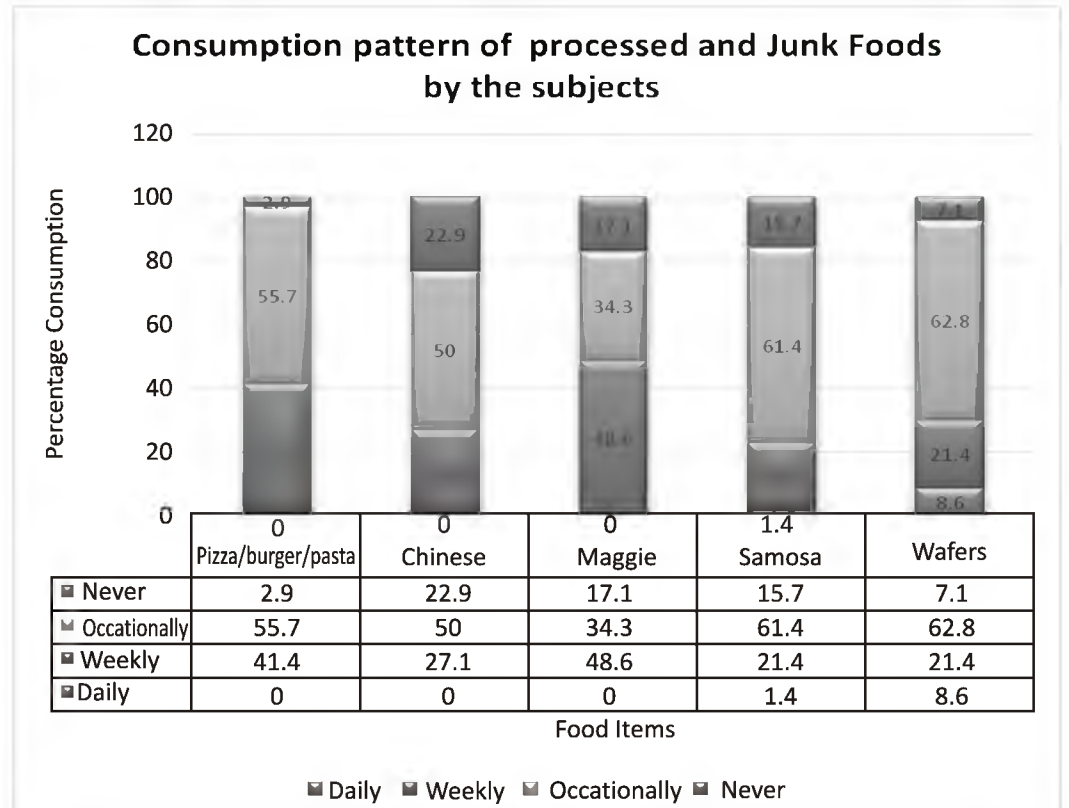
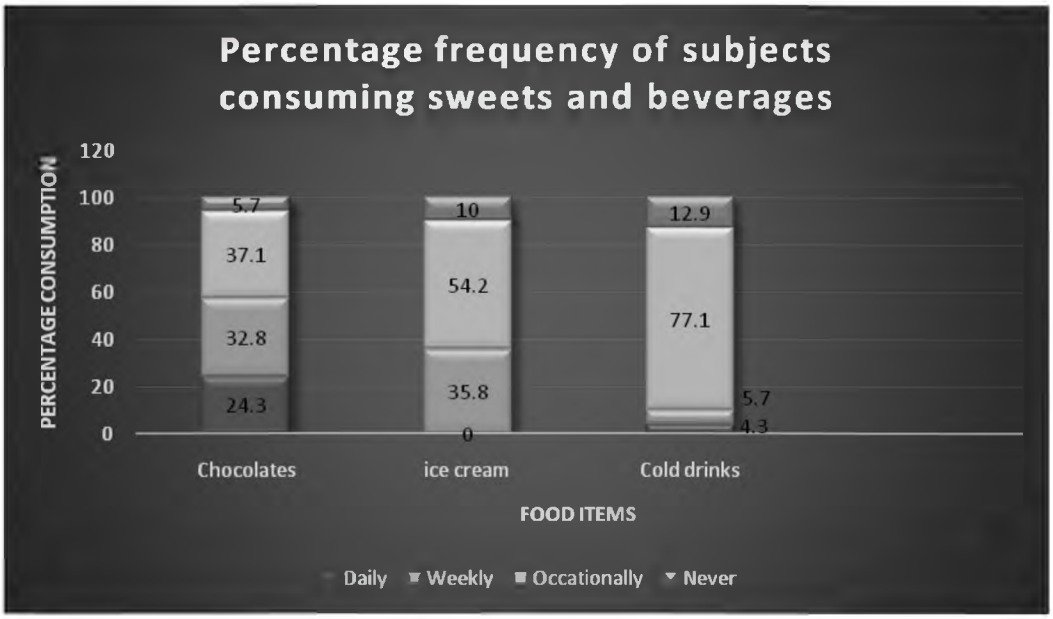


Figure 4: Consumption pattern of processed and Junk Foods by the subjects



	0 Pizza/burger/pasta	0 Chinese	0 Maggie	1.4 Samosa	Wafers
Never	2.9	22.9	17.1	15.7	7.1
Occationally	55.7	50	34.3	61.4	62.8
Weekly	41.4	27.1	48.6	21.4	21.4
Daily	0	0	0	1.4	8.6

Figure 5: Consumption pattern of sweets and beverages by the subjects



CONCLUSION

Considering the veracity of results, it may be concluded that the students need to be made more aware through education, about their individual dietary needs. They may devise their dietary strategies for food choice according to their health prior to commencement of their careers as dieticians. Furthermore, it is important to provide healthy food choices besides fast food inside the college campus. Students have a right of preference. They may opt for healthier substitutes if there is availability of healthy food in the vicinity of their college and workplace.

LIMITATIONS

Food recalls can be subject to being biased in recalling certain food items, the participants are more likely to omit than add food items, and over- or underestimate portion sizes.

Assessment of Biochemical parameters of the participants could not be planned due to scarcity of funds.

RECOMMENDATIONS

It is recommended for the institutions to provide healthy food choices and environment in addition to fast foods. Availability of adequate and appropriate healthy food environments will encourage options for healthier substitutes. It would be constructive to research what type of health education practices can be placed to help guide their eating habits and promote overall health.

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