

## Original Research

### Association of Body Mass Index with Lifestyle Behaviours: A Sampling Study

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#### ABSTRACT:

**Introduction:** Diet and physical activity are primary determinants of body mass index. The development of obesity involves multiple factors, such as food consumption, patterns of physical activity, social and environmental variables, and individual susceptibility determined by genetic and biological factors. However, the reasons are still incompletely understood. Thus the aim of this study was to estimate the prevalence of overweight and obesity in adults. **Materials & Methods:** A total of 680 participants were included in the study. The age range of the included patients was 26 to 30 years with the mean age of 28 years. Each subject's lifestyle status was assessed by a self-administered questionnaire. The overall prevalence of overweight and obesity was 20.5 and 6.8 percent, respectively. **Results:** body mass index had tendency to increase as fast foods, soft drink and Chips consumption and the time spent on watching TV increased and body mass index had tendency to decrease as vegetables, dairy products and fruits consumption and exercise frequency increased. Our findings indicate that there is a positive relationship between less healthy foods with body mass index and an inverse relationship between healthy foods and body mass index. **Discussion & Conclusion:** It was concluded that decreased time spent on watching TV was associated with lower prevalence of obesity or body fatness in children and adolescents. Viewing TV may lead to decreased energy expenditure by replacing more physically active behaviours, or to an increased energy intake as a result of food advertising, eating or between-meal snacking. TV viewing has also been suggested to lower the resting metabolic rate.

**Keywords:** Body mass index, Habits, Obesity, Life style.

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#### INTRODUCTION

High-income countries are often plagued with an obesity pandemic. In that regard, the populations in low- and middle-income countries that are affected by obesity and overweight problems has also risen, especially in urbanized areas. The prevalence of overweight and obesity has increased in most parts of the world during the last decades, among children, adolescence and adults alike.<sup>1</sup> Obesity is measured by Body Mass Index (BMI) which has been defined by World Health Organization (WHO) and is achieved by dividing weight of a person by the square of his height. A person is considered as obese when his BMI is over 30 kg/m<sup>2</sup>. The range of 25–30 kg/m<sup>2</sup> is

considered as overweight while range of 18.5-24.9 kg/m<sup>2</sup> as normal. BMI is associated with the amount of fat present in the body especially in the youth and middle aged people who have more number of obese people.<sup>2,3</sup>

Diet and physical activity are primary determinants of body mass index. The development of obesity involves multiple factors, such as food consumption, patterns of physical activity, social and environmental variables, and individual susceptibility determined by genetic and biological factors.<sup>4</sup> The rapid increase in world obesity prevalence points to behavioral changes in the 20<sup>th</sup> century as the main cause. Activities that formerly required high energy expenditure have been

replaced by the ease offered by urbanization and industrial and technological progress, leading in turn to lower energy consumption at work, during commuting, and in domestic and leisure activities. Compounding factors in this decreased energy expenditure include globalization of eating habits that favor obesity due to the dissemination of refined and processed foods, rich in fat and simple sugars and served in ever-growing portions.<sup>5, 6</sup>

In summary, the increase in childhood and adolescence obesity may lead to an increase in variety of physical and psychological problems. Therefore, childhood and adolescence obesity is now seen by many as a public health hazard and the need for effective prevention and treatment is recognized widely.<sup>7</sup> Potential driving factors for the worldwide increase in the prevalence of obesity over the time have been sought among changes in behaviour as well as environment; however, the reasons are still incompletely understood. Thus the aim of this study was to estimate the prevalence of overweight and obesity in adults.

#### MATERIALS & METHODS

The present study was done in the out patients department of the college. The present study is the sampling study done with the aim to estimate the prevalence of obesity and overweight in adults. The institute ethical committee was informed about the study and the ethical clearance certificate was obtained from them before the commence of the study. A total of 680 participants were included in the study. The age range of the included patients was 26 to 30 years with the mean age of 28 years. There were 320 males and 360 females among the included participants. Participants were randomly selected by random sampling. All the included participants were informed about the study and the detailed procedure was explained. The written informed consent was obtained from all the participants.

Firstly the height and weight of the participants were measured by bare foot. Care was taken that they have light clothing. The measurement was done by trained

person. Next thing was the BMI was calculated. Overweight and obesity were defined on the 85 th and 95 th percentiles of BMI for age and sex, respectively, as proposed by Centers for Disease Control (CDC). Physical fitness level and family conditions were collected by a standard Baecke questionnaire. Statistical analyses were performed with SPSS program (version 17, SPSS, Inc., Chicago, IL). Values were expressed as mean  $\pm$  standard deviation (SD). P-values less than 0.05 were considered statistically significant.

#### RESULTS

The present study was done in the participants of age 26 to 30 years with the aim to find the correlation between the BMI and the life style of the individual. A total of 680 participants were included in the study, of which there were 320 males and 360 females. On the basis of BMI index they were grouped into four groups: under weight, normal weight, overweight and obese person.

As shown in the table 1 the anthropometric data shows that the prevalence of overweight in age group of 26 years to 30 years was found as follows respectively: 20.2%, 23.8%, 24.1%, 22.1% and 20.8%. The obesity prevalence was found to be 6.2%, 6.8%, 7.8%, 6.2% and 5.7% respectively from 26 years to 30 years. Food consumption pattern, exercise frequency and the time spent on watching TV are presented in Table 2. Results demonstrated that most of the participants have a sedentary lifestyle and few subjects (19.7 %) more than 4 hour per week participate in regulate exercise programs. As showed in table 3, body mass index had tendency to increase as fast foods, soft drink and Chips consumption and the time spent on watching TV increased and body mass index had tendency to decrease as vegetables, dairy products and fruits consumption and exercise frequency increased. Our findings indicate that there is a positive relationship between less healthy foods with body mass index and an inverse relationship between healthy foods and body mass index.

**Table 1: Anthropometric characteristics of the participants**

Age	Under Weight	Normal weight	Over weight	obese
26 years	15.3%	70.2%	20.2%	6.2%
27 years	8.6%	64.8%	23.8%	6.8%
28 years	7.8%	71.8%	24.1%	7.8%
29 years	6.2%	75.3%	22.1%	6.2%
30 years	5.2%	78.8%	20.8%	5.7%

**Table 2: Food consumption, exercise frequency and TV watching time**

Habits	Rarely/never (%)	Once/week (%)	2-4 times/week	> 4 times/week
Fast foods	41.6	37.5	14.4	6.5
Soft drink	21.4	38.4	24.4	15.8
Chips	20.3	42.3	26.6	10.8
Dairy items	5	19.8	46.9	28.3
Vegetables	18.5	42.6	25.4	13.5
Fruits	3.2	38.9	36.7	21.2
Exercise	26.2	41.2	21.4	11.2
Watching tv	5.3	16.2	41.6	36.9

**Table 3: The relationship b/w body mass index and habits of participants**

Habits	Body Mass Index relation (P value)
Fast foods	0.9
Soft drink	0.4
Chips	0.2
Dairy items	0.8
Vegetables	0.08
Fruits	0.04
Exercise	0.05
Watching TV	0.07

## DISCUSSION

The objectives of this study were to evaluate the prevalence of overweight and obesity and estimate associations between variables related to socio-demographic conditions, lifestyle, physical activity, eating habits, food consumption frequency, and BMI in a wide range of individuals. The higher proportion of women in the sample might suggest a selection bias, but comparison of the distribution of this population according to age group and schooling with data supplied by the National Census Bureau indicates that our sample is representative of the adult population.

The plain questionnaire on food frequency used in this study consisted of two components: a list of foods and preparations and the frequency with which they were consumed. Use of this type of questionnaire allowed the researchers to identify the frequency with which foods or food groups were consumed, without classifying individuals according to nutrient or energy consumption. A wide range of epidemiological studies has implicated obesity as a significant predisposing risk factor in a variety of disabling and life-threatening medical conditions. Janiszewski et al. (2008)<sup>8</sup> suggested that lifestyle modification consisting of exercise and/or caloric restriction are associated with improvement overweight and obesity, although the magnitude of this effect varies according to the specific component studied and additional factors such as baseline values.<sup>9</sup> Unfortunately the results demonstrated that only 19.7 % of the subjects more than 4 hour per week participate in regulate exercise programs and most of them have a sedentary lifestyle.

Our results showed that body mass index had tendency to increase as the time spent on watching TV increased. General linear regression also demonstrated that the time spent on watching TV was independently associated with body mass index in adolescences. The evidence of associations between obesity and sedentary activities has been reviewed in a meta-analysis as well as a several review articles.

## CONCLUSION

It was concluded that decreased time spent on watching TV was associated with lower prevalence of obesity or body fatness in children and adolescents. Viewing TV may lead to decreased energy expenditure by replacing more physically active behaviours, or to an increased energy intake as a

result of food advertising, eating or between-meal snacking. TV viewing has also been suggested to lower the resting metabolic rate.

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