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Frequency, Types and Eating Time of Meal in Relation with Obesity: A Case Study of Almaty City of Kazakhstan

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Abstract

The study mainly deals to investigate frequency, type, and eating time of meal, and to find out biomass index (BMI). To fulfill study objectives, a multistage sampling technique was used to collect data from 100 respondents in Almaty city of Kazakhstan. Results found that eating dinner lately, consumption of fast food, sweet, alcohol, and cigarette caused obesity problem among the respondents in the study area. It is also found that 35% respondents have sedentary life style, and only 61% respondents have normal BMI while rests of respondents have abnormal BMI which may cause unhealthy life. The study results suggest providing health related education in the Almaty city about eating healthy and timely meal to overcome obesity problem.

Keywords: Health; Biomass index; Healthy food; Obesity; Almaty; Kazakhstan

Introduction

Obesity, an access body weight remains a serious public health challenge of the 21st century [1]. Although life style of people improved with increasing economic growth, the problem of obesity has constantly increased in the world [2,3]. According to a report of WHO at a global level more than three third of adults were overweight, and 13% were obese [4]. Many factors may responsible of obesity, such as physical activity, time of food consumption, and type of food [5]. Moreover, obesity may associate with multiple metabolic abnormalities including low grade inflammation, hepatic steatosis, and insulin resistance that markedly increase the risk of developing type 2 diabetes, cardiovascular disease, infertility, and some types of cancers, which cause premature death and substantial disability [6].

Obesity decreases human welfare, and thus, increases individual, national, and global healthcare costs. Overweight individuals are more likely to fatigues and other some diseases, such as chronic local inflammation and that are risk factors for certain cancers [7]. Also, obesity may influence on various aspects of reproduction. Particularly, during pregnancy, obesity increases the risk of early and late miscarriage, preeclampsia, and complications during labor and delivery [8]. Abnormal health may reduce individual productivity and it also slowdown of economic performance of an individual society, community or a nation.

Recently, Rajendra et al., found modern food intake impacted on obesity. Awareness on junk food facts is lacking amongst individuals in the community. Similarly, Lin Zhou et al., [9] analyzed the impact of changes of dietary knowledge on overweight and obesity in China and found that overweight and obesity have been increased due to consumption of pork. Moreover, Hutchison and Heilbronn [6] found that eating late in the day or at night disrupted circadian rhythms, and may had adverse effects on weight and health. Garaulet and Gómez-Abellán [10] explored that timing of meal significantly impact on obesity. Although many studies found relationship of food intake and obesity, no study has conducted in Kazakhstan. The purpose of this study is 1) to investigate frequency and eating time of meals; 2) estimation of fast food, alcohol, and cigarette consumption; and 3) determination of lifestyle and biomass index (BMI) of selected respondents in Almaty city of Kazakhstan.

Research Methodology

A multistage sampling was used to collect data from respondents [11,12]. The Almaty city of Kazakhstan was selected purposively. A well-structured questionnaire was used to conduct face to face interviews of the respondents [13,14]. The criteria to participate in the interview were based on the age limit (18-80 years old). Before conducting respondents' interviews, they were taken in confidence that data remains confidential and it would only be used for research purpose without showing their identity at any level [15,16]. In total 100 respondents were interviewed. The information was collected about height and body weight of individual to estimate body mass index (BMI). The BMI is calculated by dividing the weight of a person in Kg by the squared height in meters (m) (WHO, 2000). According to WHO the BMI was coded into different categories. More specifically, 'underweight' (<18.5 kg/m^2), normal weight (18.5-24.99 kg/m^2), overweight (25-29.99 kg/m^2), and obese (≥ 30 kg/m^2). Information of socio-demographic variables, such age and education in years were also collected. Moreover, respondents were asked about preference of their life style, and consumption of fast food, sweets, alcohol and cigarette. In addition, they were also asked about time to eat meal.

Results and Discussion

The summary of basic statistics is given in the Table 1. Results found that average age and education was 33 and 14 years, respectively. Male (179 cm) were found taller than females (165.6 cm). Similarly, the weight of males was 0.33 times higher than their counterpart. More than half of respondents used to eat every after 4 hours per day in the study area. While more than one third and 14% respondents used to eat every after 6 and 2 hours, respectively. On asking about

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Variable	Unit	Estimate
Age	Year	33
Education	Year	14
Height	Cm	
Male		179
Female		165.6
Weight	Kg	
Male		85.2
Female		56.7
Frequency of eating		
Eating in a day after every 2 h	1=Yes; 0=No	14%
Eating in a day after every 4 h	1=Yes; 0=No	51%
Eating in a day after every 6 h	1=Yes; 0=No	35%
Eating time		
Breakfast between 6-10 AM	1=Yes; 0=No	71%
Lunch between 12-3 PM	1=Yes; 0=No	81%
Dinner between 6-8 PM	1=Yes; 0=No	46%
Fast food consumption	1=Yes; 0=No	34%
Sweet consumption	1=Yes; 0=No	56%
Alcohol consumption	1=Yes; 0=No	46%
Cigarette consumption	1=Yes; 0=No	32%
Lifestyle		
Sedentary	1=Yes; 0=No	34%
Active	1=Yes; 0=No	31%
Moderate	1=Yes; 0=No	35%
BMI		
Underweight		13%
Normal weight		61%
Overweight		19%

Table 1: Summary of basic statistics.

eating time of breakfast, lunch, and dinner, it is found that more than three third respondents ate breakfast between 6-10 AM. Breakfast is first meal in the human dietary plans, and it should not be eaten after 10 AM Sjoberg [17] found that those how skip breakfast or eat it late have risk of obesity, and it may cause a sedentary lifestyle. Results also evidence that 81% respondents used to eat lunch between 12-3 PM while 46% had dinner between 6-8 PM. This indicated that majority of respondents have normal time of eating breakfast and lunch. However, more than half of respondents at dinner later than 8 PM which might be one of the reasons of obesity among respondents. Seagle et al., [18] confirmed that eating late at night have adverse effects on weight and health.

On the other hand, more than three third of respondents have consumed fast food in the study area. Ashakiran et al., [19] found that consumption of fast foods, snacking and skipping breakfast escalated the risk of being overweight. Consumption of sweet, alcohol, and cigarette was found 56, 46, and 32%, respectively Table 1. Many studies for instance Hawkes [20] and Popkin [2] found that high consumption of sweet and alcohol increased the risk of gaining excess weight. Similarly, smoking increases body metabolism and reduces appetite [21]. Approximately 34% of participants sustain a sedentary lifestyle. Whereas 35% believed in an active, and 31% in a moderate lifestyle. Regarding lifestyle, the lack of time due to work commitments, the long working hours, and day-night duty rotations along with psychological changes related to the material and social environments all these factors make it difficult for young people to be involved in any kind of physical activity [22]. Moreover, the onset of overweight or obesity may result in lower physical activity, contribute to decrease muscle strength and cardiovascular fitness and greater declines in physical function because of excess body weight and earlier onset of chronic disease [23]. According to BMI, more than three third of respondents have normal weight in the study area. While 19 and 13% respondents were overweight and underweight, respectively Table 1.

Conclusion and Policy Implication

The purpose of this study was 1) to investigate frequency and time of eating meals; 2) estimation of fast food, alcohol, and cigarette consumption; and 3) determination of lifestyle and BMI. The data was collected from 100 respondents in Almaty city of Kazakhstan by using as structured questionnaire. Results revealed that respondents in the study area at dinner lately which was reason of obesity. Moreover, 34, 56, 46, and 32% respondents consumed fast food, sweet, alcohol, and cigarette, respectively. It is also found that 35% respondents spend sedentary life style. According to BMI, more than three third of respondents have normal weight in the study area. While 19 and 13% respondents were overweight and underweight, respectively. Obesity is a major public health problem that requires concerted interventions to be prevented and controlled. The study results suggest providing nutritional education to the community to provide awareness about importance of eating a regular breakfast, controlling weight, and other health related behaviors.

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