Research Article

Prevalence of obesity, overweight and associated factors in female students of The Islamia University of Bahawalpur, Pakistan

Mushtaq Hussain Lashari¹*, Umer Farooq², Zainab Anwar¹, Samra Masood³, Nuzhat Sial¹, Foizia Afzal¹, Saba Sharif¹, Tasmia Inayat¹, Muhammad Saleem Akhtar⁴ and Sobia Malik⁵

1. Department of Zoology, The Islamia University of Bahawalpur, Pakistan
2. University College of Veterinary and Animal Sciences, The Islamia University of Bahawalpur-Pakistan
3. Institute of Pure & Applied Biology, B. Z. University, Multan-Pakistan
4. Faculty of Veterinary Sciences, B. Z. University, Multan-Pakistan
5. Department of Zoology, The Govt. Sadiq Women University, Bahawalpur-Pakistan

*Corresponding author’s email: mushtaqlashary@gmail.com

Citation
Mushtaq Hussain Lashari, Umer Farooq, Zainab Anwar, Samra Masood, Nuzhat Sial, Foizia Afzal, Saba Sharif, Tasmia Inayat, Muhammad Saleem Akhtar and Sobia Malik. Prevalence of obesity, overweight and associated factors in female students of The Islamia University of Bahawalpur, Pakistan. Pure and Applied Biology. Vol. 8, Issue 2, pp1718-1723, http://dx.doi.org/10.19045/bspab.2019.80115

Received: 13/03/2019 Revised: 15/06/2019 Accepted: 20/06/2019 Online First: 27/06/2019

Abstract

Obesity is an unwanted result of varying behaviors and lifestyle. It is moreover the alterable factor for the growth of numerous enervate diseases. The aim of this study was to find out the prevalence rate of obesity, overweight and associated factors in female students of The Islamia University of Bahawalpur, Pakistan. A cross-sectional study was conducted with a sample of 200 subjects (females) with respective age 18-24 years study in The Islamia University of Bahawalpur (Located in Southern Punjab, Pakistan). All subjects divided into two age groups. Group-I (18-21), Group-II (≥22). Subjects were screened through a questionnaire, which consists of questions about intake of breakfast, fruits, vegetables, red meat, fast food, meal regularity and frequency. The results of the present study reveal that the prevalence rates of obesity and overweight were 7.5% and 9% respectively. The results reveal that there is the significant difference between taking in breakfast, red meat, fast food and meal frequency. But taking in fruits and vegetables does not show the significant difference. Meal irregularities and intake of unhealthy food were found as the major factors lead to obesity. Little sustained modifications’ in dietary habits and lifestyle can help to combat obesity.

Keywords: Body Mass Index; Obesity; Prevalence

Introduction

Excessive accumulation of fat in the body is known as obesity which in result cause increase in body weight. The fat deposition occurs in different adipose tissue compartments [1]. Prevalence of overweight and obesity increasing, throughout the last few decades it becomes a serious public
health problem. And this is predictable that obesity is the chief reason of morbidity and death causing about 2.6 million deaths worldwide and 2.3% of the worldwide load of ailment [2]. Previous studies indicate that escalating prevalence of obesity is related with significant changes in food habits (eating detrimental outdoor meal) and insufficient every day movement in both urban and rural sectors [3]. Low socio-economic status; an unusual pattern of eating and genetic factors are also basis causes of obesity as well [4].

Previous studies result that obesity shows obesity increases the possibility of a few life-intimidating diseases such as cardiovascular disease, hypertension, type 2 diabetes, hyperlipidemia, sleep apnea and after that it has been predictable that may be reduced the life assumption around seven years [5, 6]. So researchers are for all time in search of suitable treatment methods for obesity [5]. In addition to we can be confronted a big fitness trouble by rising needs in based on obesity disorders that absolutely mandatory to use immense money and restriction assets in the near future [5, 6] Body Mass Index (BMI) more prevalent indicator use in the world for the estimation of overweight and obesity [7] individuals with BMI 25–30 kg/m² (overweight) and >30 (obese) respectively [8].

While there be no agreement on a cut-off value for obesity or over-weight in children and adults. The US Centers for Disease Control Prevention (CDC), and International Obesity Task Force (IOTF) and are more acceptable [9]. Obesity is a severe health dilemma with e with unwanted secondary effects can differ from an accusation of impairment to premature death. So declining in worth of life is inevitable [5, 10]. Numerous other methods have been developed to calculate body lipids, computed tomography, magnetic content, ultrasonography, levels of creatinine and whole body matter content. These methods are not generally accessible and are frequently costly and time-consuming and have need of trained staff [11]. In 2016, over 1.9 billion adults were either obese or overweight, of whom more than 650 million were obese.8 According to a governmental Pakistani representative study, there are 25%, 10.3% of the people to be overweight and obese respectively. This information confirms a main community fitness issues in Pakistan [12]. The main objective of this study to find out the prevalence of overweight, obesity and its associated factors among female students (Southern Punjab, Pakistan) and examine age wise difference in obesity and its factors.

Materials and methods

A cross-sectional study conducted with samples of 200 subjects (females) with respective age 18-24 years study in The Islamia University of Bahawalpur (Located in Southern Punjab, Pakistan) during January-June, 2018. All subjects divided into two age groups. Group-I (18-21), Group-II (≥22). Subjects were screened through a questionnaire, which consists of questions about intake of breakfast, fruits, vegetables, red meat, fast food, meal regularity and frequency.

The BMI was calculated for each subject as weight/(height)²(kg/m²) and the outcomes have been classified for every age groups. BMI is used to widely define distinctive weight groups BMI is <18.5 (Underweight), 18.5-24.9 (normal weight), 25-29.9 (overweight) and ≥30 (obese) respectively. Statistical analysis was performed by using MINITAB Version 14 software. The p-value 0.05 or less than are considered as statistically significant.

Results

The attribute of the study subjects who associate in the study is shown in (Table 1). The prevalence rates of obesity and
The aim of this study was to evaluate the prevalence of overweight and obesity and observe the eating habits of female students of The Islamia University of Bahawalpur. In the present study overall prevalence of obesity and over-weight is 7.5, 9% respectively. The higher prevalence rate of obesity in females than the current study recorded 9.1, 18%, 19% respectively [13, 14]. Higher overweight prevalence in females is also recorded at about 13.6%, 20.5% respectively [14, 15]. Reduction in regular physical activity may lead to obesity [16].

Appropriate nutrition during adolescence is significant for establishing good health. In the current study, there is the significant difference between breakfast eater and skipper of age 18-21 years. Breakfast eater and skippers are 73, 27% respectively. Previous studies showed that breakfast skipping was reported to be 19% females of UAE and 49% Saudi adolescents [17,18]. Breakfast skipping is an active indicator of obesity and overweight in adolescent from many countries [19].

The present study reveals that the eating of fruits and vegetables statistically not-significant association among different age groups. Previous studies reveal that intake of fruits and vegetables may contribute to reducing adiposity among over-weight or obese adult [20]. Intake of red meat shows the statistically significant association between age groups (62%). Previous studies also reveal the higher red meat consumption in young adults as compare to elder ones [21].

Meat intake has been associated with the accelerated chance for a variety of chronic diseases, while more intake of vegetables, fruits, were independently associated with a decrease threat for numerous chronic illnesses, including ischemic coronary heart disorder, diabetes, obesity, and various types of cancers [22, 23].

The current study reveals a signification effect of fast food consumptions and meal frequency related to age group (46.5%, 57.5%) respectively. Fast food and meals eaten far-away from home are generally higher in energy density, cholesterol, saturated fats, and sodium, [24] it's far affordable to postulate that common and ordinary intake of fast food might result in increased weight gain and a poorer metabolic profile. French et al. [25] stated that seventy five percent of a sample of 5000 adults, 11-18 years of age, self-suggested consuming fast food for the duration of the previous week. Moreover, Paeratakul et al. [26] stated that adolescents 11-18 years of age consume at fast food outlets an average of two times consistent with week. Meal regularity reported by Al-Rethaiaan [27] is 36.7% which is less than current results. Because the obesity turns into globally epidemic of, it's far important that steps are taken to manipulate it. Obesity organization now covers a large range of long-time period techniques starting from prevention, via weight maintenance and control of obesity co-morbid to weight loss.
Table 1. Prevalence of overweight, obesity and associated factors in female students of The Islamia, University of Bahawalpur, Pakistan

| Characteristics | Age Groups (Years) |
|-----------------|-------------------|
|                 | 19-21 n (%) | ≥22 n (%) | Total n (%) |
| BMI             |              |           |             |
| Under weight    | 24(64.8)     | 13(35.2)  | 37(18.5)    |
| Normal          | 91(70)       | 39(30)    | 130(65)     |
| Over-weight     | 9(50)        | 9(50)     | 18(9)       |
| Obese           | 10(66.6)     | 5(33.3)   | 15(7.5)     |
| Do Breakfast    |              |           |             |
| Yes             | 94(70.1)a    | 52(78.8)  | 134(67)     |
| No              | 40(29.8)b    | 14(21.2)  | 66(33)      |
| Fruits and Vegetables |      |           |             |
| Yes             | 121(90.3)a   | 61(92.4)  | 182(91)     |
| No              | 13(9.7)a     | 5(7.6)    | 18(9)       |
| Red meat        |              |           |             |
| Yes             | 86(64.2)a    | 38(57.6)  | 124(62)     |
| No              | 48(35.8)b    | 28(42.4)  | 76(38)      |
| Fast food       |              |           |             |
| Monthly         | 56(41.8)a    | 31(46.9)  | 87(43.5)    |
| Weekly          | 61(45.5)b    | 32(48.5)  | 93(46.5)    |
| No              | 17(12.7)c    | 3(4.5)    | 20(10)      |
| Meal frequency per day |      |           |             |
| 1 time          | 12(8.9)a     | 4(6.1)    | 16(8)       |
| 2 times         | 46(34.3)b    | 23(34.8)  | 69(34.5)    |
| 3-4 times       | 76(56.7)c    | 39(59.1)  | 115(57.5)   |

Different superscripts with in column show significant difference (P<0.05)

Conclusion
In conclusion of the current study, there is a higher prevalence rate of overweight and obesity with in female students of The Islamia University of Bahawalpur. The irregularity of meals, infrequent meals with the fewer intakes of fruits and vegetables, using junk food were the most common and unhealthy eating habits of the individuals. Skipping of breakfast is also a risk factor for obesity.

Authors’ contributions
Conceived and designed the experiments: MH Lashari, Performed the experiments: Z Anwar, F Afzal, S Sharif & T Inayat, Analyzed the data: MS Akhtar & S Malik,
Contributed materials/ analysis/ tools: N Sial & S Masood, Wrote the paper: MH Lashari & U Farooq.

References
1. Mosby's Medical Dictionary, 8th edition, 2009. Retrieved from https://medical-dictionary.thefreedictionary.com/obesity
2. Ezzati M, Martin H, Skjold S, Hoorn SV & Murray CJ (2006). Trends in national and state-level obesity in the USA after correction for self-report bias: analysis of health surveys. J Royal Soc Med 99(5): 250-257.
3. Hasani-Ranjbar S, Nayebi N, Larijani, B & Abdollahi M (2009). A systematic review of the efficacy and safety of herbal medicines used in the treatment of obesity. World J Gastroenterol 15(25): 3073.
4. Lal A, Moodie M, Ashton T, Siahpush, M & Swinburn B (2012). Health care and lost productivity costs of overweight and obesity in New Zealand. Aust NZ J Public Health 36(6): 550-556.
5. Hasani-Ranjbar S, Jouyandeh Z & Abdollahi M (2013). A systematic review of anti-obesity medicinal plants- an update. J Diabetes Metab Disord 12(1): 28-32.
6. Payab M, Hasani-Ranjbar S & Larijani B (2014). Whether all obese subjects both in metabolic groups and non-metabolic groups should be treated or not. J Diabetes Metab Disord 13(2): 21-25.
7. Gill T (2006). Epidemiology and health impact of obesity: an Asia Pacific perspective. Asia Pac J Clin Nutr 15(Suppl): 3-14.
8. World Health Organization. Obesity and overweight. Fact sheet N 311. http://www.who.int/mediacentre/factsheets/fs311/en/. 2012.
9. Kelishadi R (2007). Childhood overweight, obesity, and the metabolic syndrome in developing countries. Epidemiol Rev 29(1): 62-76.
10. Carreira H, Pereira M, Azevedo A & Lunet N (2012). Trends of BMI and prevalence of overweight and obesity in Portugal (1995–2005): a systematic review. Pub Health Nutr 15(6): 972-981.
11. Taheri F & Kazemi T (2010). Prevalence of overweight and obesity in adolescents in Birjand. ARYA Atheroscler 2(1): 201-205
12. Jafar TH, Chaturvedi N, & Pappas G (2006). Prevalence of overweight and obesity and their association with hypertension and diabetes mellitus in an Indo-Asian population. CMAJ 175(9): 1071-1077.
13. Chaudhry MA, Ahmad F & Ashraf MZ (2012). Frequency of overweight and obesity in students of medical College Lahore. Ann Pak Inst Med Sci 8(2): 137-140.
14. Mkuu RS, Epnere K, & Chowdhury MAB (2018). Prevalence and predictors of overweight and obesity among Kenyan women. Prev Chronic Dis 15(2):113-119.
15. Yahia N, Achkar A, Abdallah A & Rizk, S (2008). Eating habits and obesity among Lebanese university students. Nutr J 7(1): 32-39.
16. Bascetta CA (2006). Childhood Obesity: most experts identified physical activity and the use of best practices as key to successful programs. DIANE Publishing.
17. Farghaly NF, Ghazali BM, Al-Wabel HM, Sadek AA & Abbag FI (2007). Life style and nutrition and their impact on health of Saudi school students in Abha, Southwestern region of Saudi Arabia. Saudi Med J 28(3): 415-421.
18. Bin Zaal AA, Musaiger AO & D'Souza R (2009). Dietary habits associated with obesity among adolescents in Dubai, United Arab Emirates. Nutr Hosp 24(4): 30-35.
19. D’Addesa D, D’Addezio L, Martone D, Censi L, Scanu A, Cairella G & Menghetti E (2010). Dietary intake and physical activity of normal weight and overweight/obese adolescents. *Inter J Pediatr* 2010(2): 1-9

20. Ledoux T A, Hingle M D & Baranowski T (2011). Relationship of fruit and vegetable intake with adiposity: a systematic review. *Obes Rev* 12(5): e143-e150.

21. Cosgrove M, Flynn A & Kiely M. (2005). Consumption of red meat, white meat and processed meat in Irish adults in relation to dietary quality. *British J Nutr* 93(6): 933-942.

22. Sabaté J (2003). The contribution of vegetarian diets to human health. *Forum Nutr* 56: 218-220.

23. Leitzmann C (2005). Vegetarian diets: what are the advantages. *Karger Publishers. Diet Divers Health Prom* 57: 147-156.

24. Hearst MO, Harnack LJ, Bauer KW, Earnest AA, French SA & Oakes JM (2013). Nutritional quality at eight US fast-food chains: 14-year trends. *Am J Prev Med* 44(6): 589-594.

25. French SA, Story M, Neumark-Sztainer D, Fulkerson JA & Hannan P (2001). Fast food restaurant use among adolescents: associations with nutrient intake, food choices and behavioral and psychosocial variables. *Inter J Obes* 25(12): 1823.

26. Paeratakul S, Ferdinand DP, Champagne CM, Ryan DH, & Bray GA (2003). Fast-food consumption among US adults and children: dietary and nutrient intake profile. *J Am Diet Assoc* 103(10): 1332-1338.

27. Al-Rethaiaa AS, Fahmy AEA & Al-Shwaiyat NM (2010). Obesity and eating habits among college students in Saudi Arabia: a cross sectional study. *Nutr J* 9(1): 39-45.