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Original Research Article

Survey of anthropometric indices among medical university girls in Ardabil, Iran, 2017

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ABSTRACT

Background: Evaluation anthropometric used as a clinical instrument for design and determine the health policy in community. This study aimed to investigate the anthropometric indices in medical university students in Ardabil.
Methods: In this cross-sectional study height, weight, waist circumference and hip circumference were measured. BMI was used to assess the overweight and obesity and WHR was used for central obesity. Data analyzed by statistical methods in SPSS.19.
Results: The mean age of students was 20.4±1.3 years. 28% of students were in age 20. According to BMI, 7% of all students had overweight and 1.5% had obesity. According to the WHR, 78 (39%) had central obesity (WHR >0.8) which were in unhealthy high-risk group.
Conclusions: Results showed that the rate of overweight and obesity in medical university girls in Ardabil was lower than many studies in country. So, programming for rising their knowledge about obesity related factors and increasing their physical activity and modify feeding behavior is essential in future.

Keywords: Ardabil, Girls, Medical university, Overweight, Obesity

INTRODUCTION

Evaluation anthropometric used as a clinical instrument for design and determine the health policy in community.[1] The prevalence of mall nutrition among world people is one of the most important public health problems in societies. So that in addition the nutrition stunting, low weight, obesity and overweight were seen in many developing societies.[2-4] Obesity is a disease which many diseases, including diabetes, hypertension, stroke, cardiovascular disease and some cancers are the direct and indirect of its side-effects. Obesity and its problems is the most important health and nutrition issues of adolescents in developed countries.[5-6] Currently obesity in developed and developing countries is widespread and these conditions affect both infants and adolescents in society and increasing the obesity in adolescents is considered as a health issue in the entire world. In past two decades, the rate of obesity and overweight had been increased and involved millions people in world. According the WHO report, about 2 Billion people in world have overweight and among them more than 600 million are obese. Results show the increasing trend of obesity in infants and adolescents in more countries and obesity in these age groups is one of the health issues in this decade.[6-8]

In recent years due to the spread of obesity especially in infant and adolescents, Researchers have prompted numerous investigations regarding the factors associated with obesity in children and youth. Results showed that Prenatal and early years of life are effective in obesity

occurrence in childhood and adolescence. Researches showed that hormonal factors, genetic, Metabolic and behavioral factors have relation with obesity.

Obesity in infants and adolescents was more related to change in their life style and in the meantime, the rate of physical activity, time of watching TV and game with computer and other electronic devices, sleeping time and have sleeping order are defined as effective factors in obesity among infants and adolescents.[9-11]

Increasing the prevalence of underweight and obesity in adolescents can increase the risk of chronic diseases in agent and deal to early death due to these diseases.[12] According studies in Iran the prevalence of overweight and obesity in infants and adolescents were 1.2-24% and 1-28%, respectively.[13-18,5]

Given the importance of survey anthropometric indices among people, the aim of this study was to study of anthropometric indices among university students in Ardabil.

METHODS

This is a descriptive-cross sectional study that has been done on 200 medical university girl students which selected randomly form Ardabil University Medical Science students in 2017. Data collected for all girl students by interview and we used balance for measure weight and Sewing meter for measure height and then calculate BMI and also, waist and hips for calculate the WHR. BMI between 25 to 29.9 considered as overweight and more than 30 was considered obesity. Waist-to-hip ratio (WHR) more than 0.8 considered as central obesity. Collected data analyzed by statistical methods in SPSS19.

RESULTS

The mean age of students was 20.4±1.3 years. 28% of students were in age 20. According to BMI, 7% of all students had overweight and 1.5% had obesity. Of all overweight students, most of them with 35.7% were in age 20 year (Table 1).

Table 1: The BMI in students by age groups.

BMI age	Underweight		Normal		Overweight		Obesity	
	n	%	n	%	n	%	n	%
18	2	14.3	4	2.4	2	14.3	0	0
19	2	14.3	42	24.9	4	28.6	0	0
20	6	42.9	44	26	5	35.7	1	33.3
21	3	21.4	42	24.9	3	21.4	1	33.3
22	1	7.1	24	14.2	0	0	0	0
23	0	0	12	7.1	0	0	1	33.3
24	0	0	1	0	0	0	0	0
Total	14	7	169	84.5	14	7	3	1.5

Table 2: WHR by age groups.

WHR age	Normal		Central obesity	
	n	%	n	%
18	5	4.1	3	3.8
19	25	20.5	23	29.5
20	36	29.5	20	25.6
21	25	20.5	24	30.8
22	19	15.6	6	7.7
23	11	9	2	2.6
24	1	0.8	0	0
Total	122	61	78	39

According to the WHR, 78 (39%) had WHR >0.8 which were in unhealthy high-risk group (Table 2). The rate of central obesity in age 16 was the most but no significant difference between all age groups. Of all students, 6 (3%) have both overweight and central obesity and from all students which have central obesity most of them have normal BMI (75.6%) and the relation between BMI and WHR is statistically significant (Table 3).

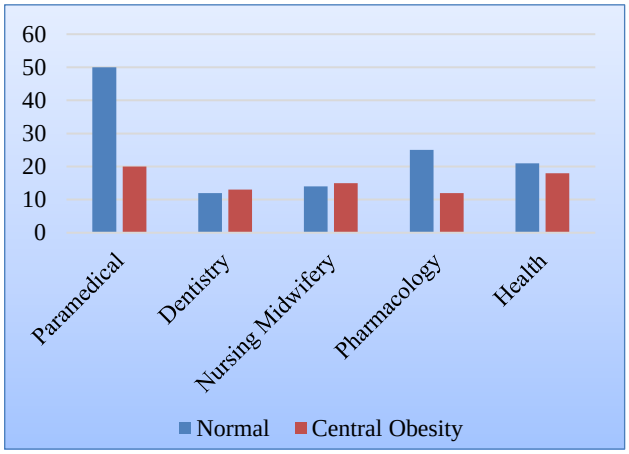

Figure 1: The rate of WHR by field of students

Table 3: The relation between BMI and WHR.

WHR / BMI	Normal		Central Obesity	
	n	%	n	%
Underweight	6	4.9	8	10.3
Normal	110	90.2	59	75.6
overweight	6	4.9	8	10.3
Obesity	0	0	3	3.8
Total	122	61	78	39

Among students with central obesity, most of them were in field of paramedical with 20 (25.6%). There was no significant relation between field and WHR (Figure 1).

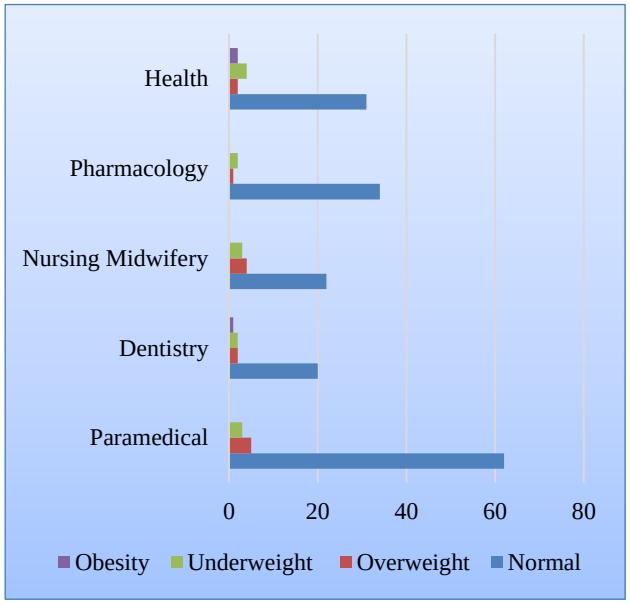

Figure 2: The rate of BMI by field of students.

According the rate of BMI, among students with overweight/obesity most of them were in field of paramedical with 5 (35.7%) and there was no significant relation between field and BMI (Figure 2).

DISCUSSION

The current study among Ardabil university girl students showed that according to the WHR, 78 students (39%) have central obesity which from them 24(30.8%) were in age 21 year. According to the BMI, 14 students (7%) have overweight and 3 students (1.5%) had obesity. Hemmati and et al in a study showed that in high school girls in Urmia the rate of underweight, overweight and obesity were 2.9%, 20.5% and 10.9%, respectively which in compare with our study results, the prevalence of underweight was higher than our study but the rate of overweight and obesity in the present study was lower than Urmia study.[7]

In a study by Shakeri and et al in 2011 in Tehran, the rate of overweight and obesity in girls was reported 14% and 4.3% orderly respectively which higher than our study rates and the age group 14 and more have the most rates of obesity and overweight. Mahmoudi et al in a study showed that the rate of overweight and obesity in adolescents were 15.1% and 9.1%, respectively which was higher than our study rates.[19-20]

In other studies, done by Taheri in Birjand, 7.3%, 8.2% and 13.2% of adolescents have overweight, obesity and central obesity, respectively which was higher than our study results.[21-22]

Differences between the present study and other studies can be related to difference in life style, climate, and nutrition, genetic and environmental conditions in many locations. In a study done by Pour M et al in Bushehr, results showed that the prevalence of obesity, overweight and underweight in study samples were 7.1%, 14.5% and 2.9%, respectively which in compare to the present study the rate of obesity and overweight was more.[5]

A study in Malaysia on school students showed that the prevalence of overweight/obesity was 9.6% which was more than our study results.[23]

In Rasht study, the prevalence of obesity and overweight among high school students was 18.6% and 5.9 % orderly which was more than our study results.[24]

Study on Lahijan High School girls showed that 14.8% and 5.3% of samples have overweight and obesity which upper than our study rats and the difference can be related to many environmental and genetic factors.[25]

The studies done in other places showed the obesity and overweight rates more than our study which the difference can be multi-factorial. Other studies confirmed that there was a significant relation between BMI and WHR which was similar to our study results because in our study the relation between BMI and WHR was statistically significant ($p = 0.021$).[26-30]

CONCLUSION

Results showed that the prevalence of overweight and obesity among Ardabil Medical University girl students was in lower rate but for prediction of them from obesity in future we could change their life style by training programs for students in university and promotion their quality of life.

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