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Weight Loss or Obesity: How Body Image is Associated with Body Mass Index among Iranian Adolescents?

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Body image satisfaction is a factor influencing adolescents' health, however, there is a lack of research in this field on Iranian adolescents. This cross-sectional study investigated the relationship between body image dissatisfaction and real nutritional status among 450 Iranian adolescents (male (n = 214) and female (n = 236)) from 10 randomly selected schools in Tehran. Measurement instruments included a demographic questionnaire and the Stunkard's Figure Rating Scale. Data on height and weight were collected using standard techniques. BMI was calculated and converted into a Z-score of BMI/age. Overweight and obesity were diagnosed by the 2007 WHO cut-off points according to age and gender. Female adolescents had a significantly higher prevalence of overweight whereas male adolescents showed a higher prevalence of obesity. Examining adolescents' perceptions about their overweight and obesity based on their responses to body image scale showed that they tend to underestimate the prevalence of overweight and obesity in themselves when compared to their real status. 68.1% of male adolescents and 68.6% of female adolescents were dissatisfied with their body image, while 35.5% and 42.8% of them would like to gain weight, respectively. The rate of body image discrepancy tended to be greater in female compared to male adolescents. Altogether, non-normal weight school adolescents found to be more dissatisfied with their body image. These findings highlight the necessity to improve public health policies in this issue.

Keywords: Body Image, Body Mass Index, Nutritional Status

Body image (BI) perception is believed to be a multidimensional variable involving cultural and social as well as internal biological and psychological factors (Cash and Pruzinsky, 2004). Although, the majority of BI studies have been carried out among Western societies, this is now a current issue in Eastern countries as well. There is limited data on the relationship between body image perception and body weight status in developing countries, especially in the Middle East region.

Body image discrepancy refers to the discrepancy between the perception of one's figure and his or her observable real figure. Because adolescence is the period of rapid physical change, adolescents become more concerned with their size and weight compared to other groups. Body image perception may be influenced by peers, parents, and the media (McCabe, Ricciardelli, & Finemore, 2002; Khor, Zalilah, Phan, Ang, Maznah, & Norimah, 2009; Ricciardelli, McCabe, & Banfield, 2000) as well as socio-economic status, sex and the individual's real body weight (O'Dea and Caputi, 2001). It has been shown that body image discrepancy can be a risk factor for obesity. Some studies have shown that the individual's body image perception is even more important than body mass index (BMI) in causing complications associated

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with obesity. Many studies have been conducted to find and explain the relationship between body image and obesity in developing as well as developed countries. O'Dea and Caputi (2001) indicated that overweight girls perceived themselves as "too fat" compared to overweight boys. Also, overweight boys were more likely than overweight girls to perceive their bodies as "about right". They also found that higher percentages of adolescent girls and overweight boys from low socio-economic status (SES) than those from middle/high SES perceived their bodies as "too thin" (O'Dea and Caputi, 2001). In Iran, a previous study conducted by Hatami et al. showed that heavier adolescents were more dissatisfied with their appearance and in this regard, there was no difference between girls and boys. Also, they showed that more dissatisfied adolescents made more efforts such as dieting, exercising, and so on than other groups to achieve body satisfaction (Hatami et al., 2015).

Also, it has been shown that body image perception is related to the cultural aspects of the society (O'Dea and Caputi, 2001, Ricciardelli et al., 2007). For instance, Cinelli and O'Dea (2001) indicated that indigenous adolescents in New South Wales were more likely to desire bigger bodies and weight gain than their non-indigenous counterparts. In this line, 54.1% of Iranian adolescents perceived themselves as thinner than their ideal body size (Hatami et al., 2015). According to the results, it seems that culture plays an important role in creating body image perception. Cross-cultural influences on body image perception and behaviors of weight control were well illustrated in the study by Zaborskis et al. (2008) that compared body image perception and weight control behaviors of adolescents across three communities in the USA, Lithuania and Croatia. In this regard, there were significant differences between the communities. The researchers reported that sex and culture may affect adolescents' body image perception (Zaborskis et al., 2008). In Malaysia, it was reported that about 30% of overweight boys and 26.7% of overweight girls perceived themselves as normal weight (Khor et al., 2009) which might reflect the effect of culture on body image perception.

Current study aimed at investigating the relationship between the Iranian adolescents' body image perception and their real nutritional and body weight status.

Method

Participants

This was a cross-sectional study of a representative sample of 13 to 18 years old male (n = 214) and female (n = 236) high school in private and public schools of Tehran. The exclusion criteria were physical disabilities intervening with anthropometric measurement, non-Iranian nationality, and clinical complications affecting weight. Implementing a multistage sampling method, 460 adolescent participants were randomly selected from 16 different high schools in Tehran. 10 students refused to participate in this study or did not completely responded to the questionnaires making the final sample 450 students. Because Tehran is a big city, to attain a representative sample, the educational districts were divided into four geographical zones (west, east, south, and north). One district was then selected randomly from each geographical zone. In each designated educational district, four schools were randomly selected (two for girls and two for boys). Within the randomly selected schools, the participants were systematically selected. The informed consent forms were signed by all the participants.

Measurement Instruments

Demographic Questionnaire. A self-report demographic questionnaire was used to obtain information on sex, age, and education of the participants.

Stunkard Figure Rating Scale. developed by Stunkard, Sorenson, and Schulsinger (1983) the figure rating scale has been used to measure body image perceptions and body image discrepancy. The scale contains nine schematic figures of males and females, given values of 1 through 9 (Figure 1): 1-2= underweight, 3-4 = normal weight, 5 =slightly overweight, 6-7 = moderately overweight, and 8-9 = highly overweight. Participants are first asked to select the schematic figure that best indicate his or her current body size (CBS) and the schematic figure that reflects his or her ideal body size (IBS). Therefore, there are three different scores of the participants' perceptions including current and desired body size perceptions and the body image

(BI) discrepancy which is interpreted as a measure of body dissatisfaction. The respondents were asked to choose their perceived current body size (what they currently look like) as well as their desired body size (what they wish to look like). The current body size score minus the desired body size score was interpreted as body size discrepancy score. A positive score indicated a wish to be thinner, a zero score indicated satisfaction with body size and a negative score indicated a desire to be fatter or bigger size. A higher discrepancy score indicates higher body size dissatisfaction. Because the assessment tool is simple and quick for administrators and needs minimal verbal fluency, it is ideal for children and adolescents.

Anthropometric Measures. Body weight was assessed to the nearest 0.1 kg using a portable digital Seca 762 scale (Vogel & Halke, Hamburg, Germany) in light clothes and no shoes. Height was measured to the nearest 0.1 cm using a standard height bar. BMI was calculated as weight (kg) divided by squared height in meters (m^2). The age and sex-specific 2007 WHO percentiles reference data were used to drive BMI z-scores (WHO, 2007). Then, participants were characterized as underweight, normal weight, overweight and obese. BMI z-scores comprising of severely thin/thin (<-2SD), normal weight (≥-2SD and <+1SD), overweight (≥ 1SD and <+2SD) AND obese (≥+2SD) specific for sex.

Data Analysis

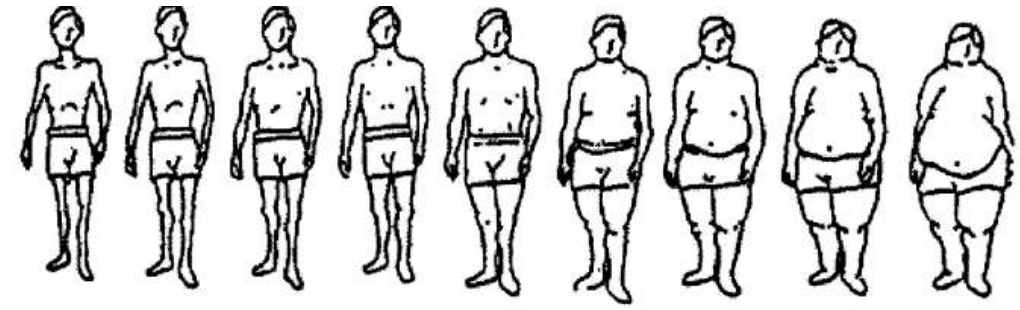
Data analysis was carried out using IBM SPSS 22 statistical package. Chi-square tests were made for categorical variables and One-way ANOVA's were used for continuous variables. All statistical inferences were made at $\alpha = 0.05$ level and all statistical tests were two-tailed.

Results

The sample consisted of 450 adolescents. Mean and standard deviation of their age was 14.90 ± 1.45 years. According to 2007 WHO z-scores, it was found that 1.2% of the participants were underweight (n = 6), 21.9% (n = 108) were overweight and 18% (n = 89) were obese. Adding up the overweight and obese groups, the prevalence of excess weight among the sample was 39.9% (n = 197). Therefore, the majority of the adolescent participants were categorized as normal weight group (n = 265; 58.9%) .

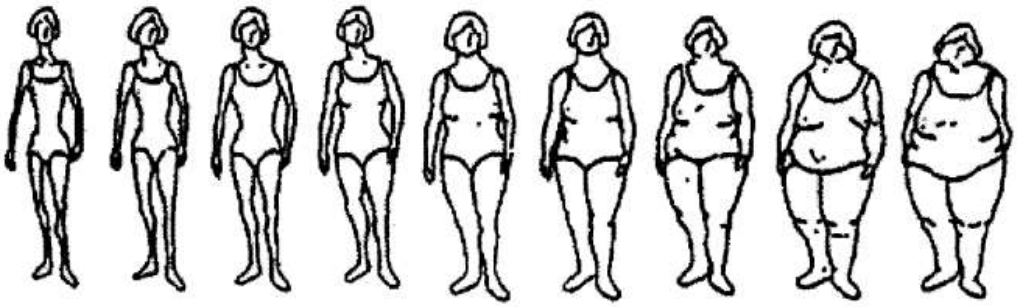
Table 1
Frequency and Percentage of Perceived BMI Classification Relative to Measured BMI of Adolescent Participants Living in Tehran (n = 450)

Perceived BMI	Measured BMI-WHO percentile classification							
	Underweight		Normal weight		Overweight		Obese	
	n	%	n	%	n	%	n	%
Underweight	2	33.3	55	20.8	4	3.9	1	1.3
Normal weight	3	50.0	181	68.3	45	44.1	10	13.0
Overweight	1	16.7	28	10.6	51	50.0	49	63.6
Obese	0	0.0	1	0.4	2	2.0	17	22.1



1 2 3 4 5 6 7 8 9

Boys



1 2 3 4 5 6 7 8 9

Girls

Figure 1: Stunkard Figure Rating Scale

Table 2

Frequency and Percentage of Body Image Satisfaction by Gender (n = 450)

BI perception	Gender				p value (χ^2 test)
	Male		Female		
	n	%	n	%	
Dissatisfied-gain	76	35.5	101	42.8	
Satisfied	66	30.8	74	31.4	0.15
Dissatisfied-lose	72	33.6	61	25.8	
Total	214	100	236	100	

A comparison between gender groups showed that there were more female adolescents categorized as overweight (n = 58; 24.6%) than male adolescents (n = 44; 20.6%), and more male adolescent categorized as obese (n = 55; 25.7%) than female adolescents (n = 22; 9.3%) ($p < 0.001$). Higher prevalence of overweight and obesity was observed among second high school students (older adolescents in grades 10 through 12) compared to first high students (grads 7 through 9) ($p = 0.009$). The prevalence of perceived overweight and obesity was different compared to the real status of the adolescent participants (see table 1).

About 13.8% of the sample (n = 62) perceived themselves as thin, 4.4% (n = 20) perceived themselves as obese and 28.7% (n = 129) perceived themselves as overweight (see Table 1).

Overall, 66.4% of the adolescent participants (n = 299) were dissatisfied with their body image, 39.3% (n = 177) wished to be heavier (wanting to gain weight) and 29.6% (n = 133) would like to be thinner. Table 2 shows the prevalence of BI dissatisfaction by gender. The results also showed that only one-third of the adolescent participants were satisfied with their body weight. However, the difference between gender groups with regard

to their BI perceptions was not statistically significant ($p = 0.15$).

Results of Duncan's test showed that there is a statistically significant difference between obese and normal weight groups in BI discrepancy (see table 3). Among female adolescents, thin group exhibited a similar BI discrepancy scores to the obese group, while they exhibited significantly greater BI discrepancy than normal and overweight groups. Among male adolescents, overweight and obese adolescents with similar dissatisfaction scores exhibited greater BI discrepancy scores than thin and normal-weight adolescents in the sample. However, the BI discrepancy scores were significantly different between thin and obese male adolescents. In fact, the obese male adolescents exhibited a greater BI discrepancy scores and higher dissatisfaction (see Table 3).

Table 3
Mean and Standard Deviation of Body Image Discrepancy by Body Weight Status Among Adolescent Participants Living in Tehran ($n = 450$).

	Nutritional Status								*p*-value
	Thin		Normal Weight		Overweight		Obese		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
BI discrepancy score total ($n = 450$)	$1.33^{a,b}$	1.36	0.88^{a}	0.93	$1.21^{a,b}$	.91	1.83^{b}	1.19	$<0.0001^{*}$
BI discrepancy score female ($n = 236$)	2.50^{a}	2.12	0.81^{b}	0.77	1.31^{b}	.94	$1.73^{b,a}$	.88	$<0.0001^{**}$
BI discrepancy score male ($n = 214$)	0.75^{b}	0.50	$0.98^{a,b}$	1.12	$1.07^{a,b}$	0.87	1.87^{a}	1.31	$<0.0001^{***}$

Note: *F=18.99 ; df=3 ; One-way ANOVA [F (3, 450) = 18.99, p < 0.0001]; **F=13.11 ; df=3 ; One-way ANOVA [F (3, 236) = 13.11, p < 0.0001]; ***F=8.40 ; df=3 ; One-way ANOVA [F (3, 214) = 8.40, p < 0.0001].Non-Similar letter shows significant difference

Discussion

In the current study, most of the adolescents in the sample showed normal body weights. While some studies have found greater rates of overweight/obesity among adolescent samples (Pinho et al., 2019, Kelishadi et al., 2008) others have found lower percentages (Hales et al., 2018, de Sousa Ferreira et al., 2021). The results of our study were consistent with another study in Iran (Akbarzadeh et al., 2016) showing an increasing trend in overweight and obesity among Iranian adolescents. This finding is similar to what was found among Malaysian adolescents (Khor et al., 2009). The result of the current study that showed female adolescents were more overweight than males was similar to the studies conducted in Malaysia (Khor et al., 2009), and Nigeria (Maruf et al., 2013). However, the percentage of obesity was greater in male adolescents in the current study which was in line with the studies performed in Fortaleza-CE (de Sousa Ferreira et al., 2021) and most of the Middle East countries (Musaiger, 2012).

The current study revealed a high percentage of dissatisfaction with body image among adolescents which was similar to other studies in Iran (Shoraka et al., 2019, Baharvand et al., 2020) and other countries like Spain (Bully and Elosua, 2011) and Brazil (Pinho et al., 2019), but it was different from findings of Ribeiro-Silva et al. (2018) in Brazil. Similar to the study conducted by Cinelli and O'Dea (2009) most of dissatisfied adolescents in the current study wished to have greater body sizes and to gain weight. This may indicate a tendency among Iranian adolescents toward greater body sizes and it may have roots in Asian cultures that believe obesity is a sign of health and wealth and thinness is a symbol of poverty and illness (Garrusi and Baneshi, 2017).

While some previous studies have shown gender differences in perceptions of one's body and body size dissatisfaction (Ansari, 2014, Mäkinen, 2012), there were no significant gender differences

in body perceptions in this study similar to another study conducted in Iran (Garousi, 2012). The high prevalence of BI dissatisfaction, even with a normal weight, demonstrates that the adolescent participant either underestimate or overestimate their actual weight status and perceive themselves in a different way from reality. This proves that they are influenced by society and national/international media, which may have influenced their definitions of their body sizes (Uchôa et al., 2019). Some studies have shown that low self-concept, and a lack of control over one's body among adolescents (Alipoor et al., 2009), as well as media (Ricciardelli et al., 2000) positively affect adolescents' body image discrepancy. Also, it was shown that fear of negative evaluations by peers is positively associated with body image discrepancy in female adolescents (Michael et al., 2014).

Some studies have shown that besides other influences like media and biological factors, culture can be an important factor in determining overweight and obesity among adolescents (Irandoost et al., 2021, Cohen et al., 2013). In addition, the results of another study indicated that there is a significant association between spiritual intelligence and relying on an internal core with body image in adolescents (Jafari and Esmaeili, 2015).

Most of the countries that define obesity as a value such as Kuwait, Saudi Arabia, Jordan, Bahrain, and Iran are located in the Middle East in which people believe that obese and overweight women are more powerful and women in these countries are less physically active (Mehio Sibai et al., 2010). In these countries, a common cultural belief that encourages fatness specially among women is that obesity is a sign of beauty, health, and affluence. In Iran, such idea has been inherited from generation to generation since the time of Qajar kings. According to a study published in the Iranian Students' Newsletter in August 2014, in which 1,500 Iranian men of various ages were interviewed, It was found that Iranian men prefer relatively fat women over thin women (Pakru, 2014). In this study, 1,500 young Iranian men were interviewed and the results showed that 50% of the people were inclined towards women with obese bodies, 30% toward women with overweight, and only 20% preferred thin women. Parku (2014) claims that an explanation for these findings is that in Iranian-Islamic culture women with average physique are believed to be physically and mentally healthier and having higher fertility and childbearing power than lean women. Also, a qualitative study investigating the causes of obesity among Iranian Kurdish adults found that they tend to be interested in gaining weight and that their positive attitudes toward obesity affects their behaviors and values. Communities with traditional and local cultures tend to define obesity as a value, something that has been passed down from previous generations to the next (Irandoost et al., 2021). Likewise, Cohen et al. showed that in developing countries of the African Continent, positive attitudes toward obesity and the social value of stoutness (fat abdomen for men and chubby hips for women) had contributed to the gradual growth of obesity (Cohen et al., 2013). Consistent with these studies, the current study found that overweight and obesity may not be merely caused by nutritional factors, but also by individuals' attitudes toward obesity/overweight according to their cultural backgrounds.

Conclusion

Findings indicated that Iranian adolescents are concerned with their body image. A substantial proportion of adolescents are not satisfied with their body weight, leading them to have a poor body image. Also some Iranian adolescents may be interested in gaining weight and having a big body. Due to causing negative effects of inaccurate body image, such as unhealthy eating habits or disordered eating behaviors, the results indicate that appropriate education and counseling should be accompanied among adolescents in schools and other communities in society. Since the population living in Tehran is a mix of different ethnicities with diverse cultural backgrounds, separate intervention programs for male and female adolescents are required to address body image concerns, as they have different expectations and reactions about their body shape and size.

Author Note:

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actively contributed in this study: Monireh Hatami designed the study, ran the data analysis, and prepared the original draft; Mansooreh Sadat Mojani-Qomi contributed in methodology, critical review of the final manuscript, and editing. Parisa Ziarati contributed in the conceptualization and writing.

Statements:

This article is derived from a research project that was approved by the scientific and ethical committee of the Islamic Azad University, Tehran medical sciences branch (IAUTMS) (grant number: IR.IAU.PS.REC.1398.216). There is no conflict of interest. All participants read and approved the informed consent forms.

References

AKBARZADEH, M., MOGHIMBEIGI, A., MAHJUB, H. & SOLTANIAN, A. R. 2016. Trajectories of Change in Obesity among Tehranian Families: Multilevel Latent Growth Curve Modeling. *International Journal of Family Medicine*.

ALIPOOR, S., GOODARZI, M. A., ZARRA-NEZHAD, M. & ZAHERI, L. 2009. Analysis of the Relationship Between Physical Self-Concept and Body Image Dissatisfaction in Female Students. *Journal of Social Sciences,* 5**,** 60 - 66.

ANSARI, E. L., DIBBA, W., STOCK C, E. 2014. Body image concerns: levels, correlates and gender differences among students in the United Kingdom. *Cent Eur J Public Health,* 22**,** 106-17.

BAHARVAND, P., MALEKSHAHI, F. & MAHDIYAN, P. 2020. Prevalence of body image concern among schoolgirls aged 12-17 years in Iran. J Educ Health Promot. *J Educ Health Promot.*

BULLY, P. & ELOSUA, P. 2011. Changes in body dissatisfaction relative to gender and age: the modulating character of BMI. *Span J Psychol,* 14**,** 313-22.

CASH, T. & PRUZINSKY, T. 2004. *Body Image: A Handbook of Theory, Research, and Clinical Practice,* New York, Guilford Press.

COHEN, E., BOETSCH, G. & PALSTRA, F. 2013. Social valorisation of stoutness as a determinant of obesity in the context of nutritional transition in Cameroon: the Bamileke case. *Soc Sci Med,* 96**,** 24–32.

DE SOUSA FERREIRA, L., RODRIGUES, T. C., DE LIMA, V. S., BEZERRA, A. N., ALBUQUERQUE, S., ALBUQUERQUE, N. V. & PEREIRA, C. P. 2021. Percepção da imagem corporal em adolescentes e a relação com seu estado. *Research, Society and Development*.

GAROUSI, S., GARRUSI, B., DIVSALAR, F., DIVSALAR, K. 2012. Body satisfaction and management in Iranian students. *Mater Sociomed.,* 24**,** 34-7.

GARRUSI, B. & BANESHI, M. R. 2017. Body dissatisfaction among Iranian youth and. *Cad. Saúde Pública,* 33.

HALES, C. M. D., FRYAR, C., CARROLL, M. D. S., FREEDMAN, D. L. & OGDEN, C. 2018. Trends in Obesity and Severe Obesity Prevalence in US Youth and Adults by Sex and Age, 2007-2008 to 2015-2016. *JAMA,* 319**,** 1723–1725.

HATAMI, M., TAIB, M. N. M., DJAZAYERY, A., , M. S. M. & MEJLEJ, H. F. 2015. Relationship between body image, body dissatisfaction and weight status in Iranian adolescents. *Archives of obesity,* 1.

IRANDOOST, S. F., BAYANGANI, B., DEHDARI, T., YOUSEFI LEBNI, J., BABASFARI, N., MEHEDI, N. & TAGHDISI, M. H. 2021. Exploring the Causes of Obesity Among Adults in the Kurdish Regions of Iran: A Qualitative Study. *Int Q Community Health Educ.* .

JAFARI, F. & ESMAEILI, S. 2015. Comparison Of Relation Between Body Image And Spiritual Intelligence Among Male And Female Students. *Terends in Life Science,* 4**,** 2319–5037 (e).

KELISHADI, R., ARDALAN, G., GHEIRATMAND, R., MAJDZADEH, R., HOSSEINI, M., GOUYA, M. M., RAZAGHI, E. M., DELAVARI, A., MOTAGHIAN, M., BAREKATI, H., MAHMOUD-ARABI, M. S. & LOCK, K. 2008. Thinness, overweight and obesity in a national sample of Iranian children and adolescents: CASPIAN Study. *Child Care Health Dev. 2008 Jan;34(1),* 34**,** 44-54.

KHOR, G. L., ZALILAH, M. S., PHAN, Y. Y., ANG, M., MAZNAH, B. & NORIMAH, A. K. 2009. Perceptions of body image among Malaysian male and female adolescents. *Singapore Med Journal,* 50**,** 303-311.

MÄKINEN, M., PUUKKO-VIERTOMIES, L. R., LINDBERG, N., SIIMES, M. A., AALBERG, V. 2012. Body dissatisfaction and body mass in

girls and boys transitioning from early to mid-adolescence: additional role of self-esteem and eating habits. *BMC Psychiatry,* 12.

MARUF, F. A., ARONU, U., CHUKWUEGBU, K. & ARONU, A. E. 2013. Influence of gender on prevalence of overweight and obesity in Nigerian schoolchildren and adolescents. *Tanzan J Health Res.,* 15**,** 247-51.

MEHIO SIBAI, A., NASREDDINE, L., H., M. A., ADRA, N., TABET, M. & HWALLA, N. 2010. Nutrition Transition and Cardiovascular Disease Risk Factors in Middle East and North Africa Countries: Reviewing the Evidence. *Annals of Nutrition and Metabolism,* 57**,** 193–203.

MICHAEL, S. L., WENTZEL, K., ELLIOTT, M. N. & AL., E. 2014. Parental and Peer Factors Associated with Body Image Discrepancy among Fifth-Grade Boys and Girls. *J Youth Adolescence* 43**,** 15-29.

MUSAIGER, A. O., AL-MANNAI, M., TAYYEM, R., AL-LALLA, O., ALI, E. Y., KALAM, F., BENHAMED, M. M., SAGHIR, S., HALAHLEH I., DJOUDI, Z., CHIRANE, M., 2012. Prevalence of Overweight and Obesity among Adolescents in Seven Arab Countries: A Cross-Cultural Study. *Journal of Obesity*.

O'DEA, J. A. & CAPUTI, P. 2001. Association between socioeconomic status, weight, age, and gender, and the body imageand weight control practices of 6 to 19-year-old children and adolescents. *Health education research: Theory and Practice,* 16**,** 521-532.

PAKRU, P. 2014. Do Iranian men like fat women more? *https://www.noarous.com/* [Online]. Available: https://www.noarous.com/خواستگار های-ایرانی-زن-چاق-می پسندند [Accessed 01 9].

PINHO, L., F., B. M. F. S., SILVA, R. R. V., MESSIAS, R. B., SILVA, C. S. O. & BARBOSA, D. A. 2019. . Perception of body image and nutritional status in adolescents of public schools. *Rev Bras Enferm.,* 72**,** 229-35.

RIBEIRO-SILVA, R., FIACCONE, R. L., CONCEIÇÃO-MACHADO, M. E. P. D., RUIZ, A. S., BARRETO, M., L & SANTANA, M. L. P. 2018. Body image dissatisfaction and dietary patterns according to nutritional status in adolescents. *J Pediatr (Rio J),* 94**,** 155-161.

RICCIARDELLI, L. A., MCCABE, M. P. & BANFIELD, S. 2000. Body image and body change methods in adolescent boys Role of parents, friends, and the media. *Journal of Psychosomatic Research***,** 189-197.

RICCIARDELLI, L. A., MCCABE, M. P., WILLIAMS, R. J. & THOMPSON, J. K. 2007. The role of ethnicity and culture in body image and disordered eating among males. *Clinical Psychology Review,* 27**,** 582-606.

SHORAKA, H., AMIRKAFI, A. & GARRUSI, B. 2019. Review of Body Image and some of Contributing Factors in Iranian Population. *Int J Prev Med*.

UCHÔA, F., UCHÔA, N. M., DANIELE, T., LUSTOSA, R. P., GARRIDO, N. D., DEANA, N. F., ARANHA, Á. & & ALVES, N. 2019. Influence of the Mass Media and Body Dissatisfaction on the Risk in Adolescents of Developing Eating Disorders. *International journal of environmental research and public health,,* 16.

WHO 2007. Growth reference data for 5-19 years. *World Health Organization.*

ZABORSKIS, A., PETRONYTE, G., SUMSKAS, L., KUZMAN, M. & IANNOTTI, R. J. 2008. Body Image and Weight Control among Adolescents in Lithuania, Croatia, and the United States in the Context of Global Obesity. *Croatian Medical Journal,* 49**,** 233-42.

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