



ISSN: 0975-833X

Available online at <http://www.journalera.com>

International Journal of Current Research  
Vol. 12, Issue, 11, pp.14885-14890, November, 2020

DOI: <https://doi.org/10.24941/ijcr.40185.11.2020>

INTERNATIONAL JOURNAL  
OF CURRENT RESEARCH

## RESEARCH ARTICLE

### SOCIO-DEMOGRAPHIC DETERMINANTS OF OBESITY STIGMA AMONG THE GENERAL PUBLIC FROM RIYADH, KSA

**<sup>1</sup>Maha Al Turki, MSc, PhD., <sup>\*1</sup>Kavita Sudersanadas M., MSc, PhD., <sup>1</sup>Saeed Wujd., BSc., <sup>1</sup>Amjad ATofail, BSc., <sup>1</sup>Yara A Marshad, BSc., <sup>1</sup>Lina A Sherbini, BSc., <sup>2</sup>Amir Ahmed A., MSc and Winnie Philip<sup>3</sup>.MSc.**

<sup>1</sup>Dept. of Clinical Nutrition, College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University for Health Sciences, King Abdullah International Medical Research Centre, NGH, Riyadh, Kingdom of Saudi Arabia

<sup>2</sup>College of Medicine, King Saud Bin Abdul-Aziz University for Health Sciences, King Abdullah International Medical Research Centre, NGH, Riyadh, Kingdom of Saudi Arabia

<sup>3</sup>Research Unit, College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University for Health Sciences, King Abdullah International Medical Research Centre, NGH, Riyadh, Kingdom of Saudi Arabia

#### ARTICLE INFO

##### Article History:

Received 10<sup>th</sup> August, 2020  
Received in revised form  
17<sup>th</sup> September, 2020  
Accepted 15<sup>th</sup> October, 2020  
Published online 30<sup>th</sup> November, 2020

##### Key Words:

Socio-demographic variables,  
Obesity-Stigma, Fat phobia,  
FPS, General public.

#### ABSTRACT

**Background:** Stigma towards individuals with obesity is a matter of global concern with several biopsychosocial outcomes. Obesity stigma from the general public keeps those with obesity to stay away from health care, employment, and educational facilities. The development of stereotypes due to weight stigma can limit opportunities and increase psychosocial distress among overweight or obese individuals. **Objective:** The aim of the study was to assess sociodemographic determinants of obesity stigma/ fat phobia of the general public. **Methods:** This descriptive cross-sectional study was done in Riyadh city of KSA. A representative sample of adult residents of both gender (n=374) of Riyadh city was selected at random. A validated and structured questionnaire was used to collect sociodemographic data. The obesity stigma of the respondents towards individuals with obesity was measured by using a Fat Phobia Scale (FPS). Data analysis was undertaken to examine sociodemographic variables' influence on the fatphobia score using chi-square analysis: percentages, Mann Whitney U test. Median, Inter Quartile Ranges (IQR), and frequency distribution were used to express the data. **Results:** Weight stigma of the mild form (FPS= 3.00 (2.79, 3.21) was observed among the general public. Females showed more obesity stigma than males. Sociodemographic variables such as age, gender, and marital status have no significant influence on fatphobia. Educational status significantly influences the FPS and fatphobia. **Conclusions:** The general public has mild fatphobia/weight stigma, which can be changed with higher education and health education.

Copyright © 2020, Maha Al Turki et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**Citation:** Maha Al Turki, Kavita Sudersanadas M., Saeed Wujd., Amjad ATofail, Yara A Marshad, Lina A Sherbini, Amir Ahmed A. and Winnie Philip. 2020. "Socio-demographic determinants of obesity stigma among the general public from Riyadh, KSA", *International Journal of Current Research*, 12, (11), 14885-14890.

## INTRODUCTION

Weight-related stigma or obesity stigma/Fatphobia is perceived as a universal feature of different societies. Persons with higher body weight are the frequent target of weight stigma/fatphobia. Weight stigma is negative attitudes and beliefs directed towards individuals due to weight and are usually expressed through stereotypes, prejudicial attitudes, and discriminatory behaviors<sup>(1)</sup> from the family and general public members. Members of the general public, including family members, friends, co-workers, and people from diverse locations such as

**\*Corresponding author:** Kavita Sudersanadas M., MSc, PhD.,  
Dept. of Clinical Nutrition, College of Applied Medical Sciences, King Saud Bin Abdul-Aziz University for Health Sciences, King Abdullah International Medical Research Centre, NGH, Riyadh, Kingdom of Saudi Arabia  
Abdullah International Medical Research Centre, NGH, Riyadh, Kingdom of Saudi Arabia

workplaces, educational, and healthcare settings, may be stigmatized about those with obesity<sup>(1,2)</sup>. The general public associate obesity with stereotypes such as laziness and little self-control, unmotivated, less competent, etc., leading to injustice and unfair treatment.<sup>(3,4)</sup> Hence, persons with obesity were reluctant to avail of health care to avoid stereotypes<sup>(4-6)</sup>, leading to detrimental physical and psychological health. Such stress elevates the action of stress hormone-cortisol and hence increased metabolism and storage fat secretion<sup>(7)</sup>. Consequently, the negative stereotype may lead to additional weight gain<sup>(8)</sup> due to stress-related polyphagia resulting in high-calorie food intake and refusal of dietary guidance<sup>(8,9)</sup>. Weight-related stigmatized circumstances were prone to trigger apprehensions about public rejection<sup>(13,14)</sup>.

There have been demands for lawful procedures to address weight-based injustices, similarly racial, age, and sex discrimination. The research regarding weight discrimination and stigmatized attitude toward individuals with obesity has gained attention in recent years. The increasing incidence of obesity may increase weight stigma. This reflects the importance of weight stigma as public health problem<sup>(8)</sup>. However, there was limited published research on the determinants of weight stigma<sup>(13)</sup>. Earlier studies on explicit and implicit weight stigma measures based on Attitudes to Obese People (ATOP) Scale and Implicit Association Tests(IAT) indicated no data was available for KSA<sup>(14)</sup>. Hence, the present study was designed to inspect the sociodemographic determinants of obesity stigma or fat phobia of the general public living in Riyadh, KSA, toward individuals with obesity by using the Fat Phobia Score (FPS). The study protocol was approved by the Institutional Review Board of King Abdullah International Medical Research Centre (KAIMRC)/ Ministry of National Guard- Health Affairs (SP18/230/R).

## MATERIALS AND METHODS

The study was conducted to evaluate sociodemographic determinants of obesity stigma among the general public. Cross-sectional data from self-enforced questionnaires from members of the general public were used for the study. A representative sample of the general public residing in Riyadh city of KSA was selected at random from different community settings such as mosque, gymnasiums, Universities, public health, and shopping malls. Three hundred and seventy-four adults of both genders were recruited at random. Nationalities other than Saudis, those below the age of 18 and above 60 years, were excluded from the study. The selected respondents were given information about the study protocol and a consent form. Those who are unwilling to provide consent were excluded from the study. The sociodemographic variables such as age, gender, marital status, and educational status, which have a possible influence on the development of obesity stigma or weight stigma, were studied.

**Data Collection Tools:** Data concerning sociodemographic variables were collected by using a suitably structured questionnaire. A validated short Fat Phobia Scale was used to assess obesity stigma/ Fatphobia of the respondents<sup>(15)</sup>. This scale was initially designed in the English language and available from the Rudd Centre website for food policy and obesity, Yale University<sup>(14)</sup>. The English version was translated by an independent translator into Arabic and then converted back to English and then again to Arabic to ensure accuracy. The short Arabic version of the FPS was tested twice for its validity and reliability.

The fatphobia scale had 14 pairs of adjectives sometimes used to describe obese or fat people<sup>(15)</sup>. These can be categorized into those related to physique, personality traits, and dietary stereotypes. The details of the fatphobia scale short form used in the study are given in Table 1. The respondents were asked to score each pair under a 5-point Likert scale.

**Statistical analysis:** Collected data were coded; cleaned and missing data was controlled before analysis. Analyses were performed by using SPSS (Statistical Package for the Social Sciences V 20).

The fatphobia score was calculated by taking the sum of scores and then divided by 14. The lower the score, the lesser will be the fatphobia and vice versa. FPS analysis was conducted by assessing median and Interquartile ranges and distribution of FPS scores based on the established cut-off points. FPS was classified as neutral or no fatphobia (<2.5), mild fatphobia (2.5–3.45), moderate fatphobia (3.46–4.39), and high-fat phobia (>4.40)<sup>(15)</sup>. Shapiro Wilks test was used in this study to test the normality of the data. The mean ranks and median scores were compared by the Mann Whitney U test. Chi-square test was used to assess the sociodemographic determinants of fatphobia. A “p” value of < 0.05 was considered statistically significant.

## RESULTS

The normality of the data of the study was tested by using and Shapiro Wilks test. The test statistic (Shapiro Wilks Statistic = 0.985 and p value= 0.001) indicated that the data did not follow a normal distribution. Hence non-parametric tests were used to analyse the data and to draw the conclusion of the study. Table 2 presents the classification of fatphobia prevalent among the general public of Riyadh. The study participants scored a minimum score of 1(Neutral or no fatphobia) and a maximum score of 4.36(Moderate fatphobia)—the data showed that the prevalence of fatphobia among the respondents was 81.55%. The great majority had either a mild form of fatphobia (64.7%) or a moderate form of fatphobia (16.8%). It was observed that there was a non-prevalence of a high level of fatphobia among the general public. Neutral fatphobia was exhibited by 18.4% of the study subjects. Table 3 details the Fatphobia scores distributed as per the gender of the study participants. It was noted that there was a significant difference in the median scores of males and females concerning the questions related to the adjective used to describe those with obesity, such as obese people have will power/no will power (U = 15034.0; p= 0.016); those with obesity are strong/weak (U = 13987.0; p= 0.001), and they have high self-esteem/low self-esteem (U = 15453.00; p= 0.045). Table 4 details the socio-demographic determinants of obesity stigma. The majority (46.5%) of the subjects belonged to the age group of 18-32 years, followed by those in the age group of 33- 46 years (30.5%). In this age group, 25% of the subjects have FPS below 2.5, and 75% had a score of more than 3.29, with a median FPS of 3. Compared to other age groups, fatphobia is mostly prevalent in the age group of 18-32years. Forty-three % of the respondents with fatphobia belong to this age group. It was found that as age advances, the proportion of respondents with fatphobia is reduced. Fifty-one percent of the participants were females, and among those subjects with Fatphobia, 52.5 % are females. Compared to males, females scored a higher FPS with a median score of 3.07. The IQR for female respondents indicated that 25% of the subjects were having FPS <2.71, and 75% had a score >3.29. The respondents' marital status indicated that the majority (48.1%) are either married or unmarried (44.4%). Obesity stigma was found more prevalent among married (49.8%) than that among the unmarried (43.3 %). Respondents with the marital status of married or unmarried or divorced indicated the same median FPS of 3 with a mild fatphobia. Those who are widowed had shown comparatively less median FPS of 2.79. The majority of the respondents had education up to high school (47.1%), accompanied by bachelor's degrees (33.4%). A minor % of them got elementary school (11.8%) or postgraduate education level (7.8 %).

**Table 1. Pairs of adjectives used in fat phobia scale <sup>(20)</sup>**

Sl.No	Adjectives used to describe people with obesity	
	Adjective with lowest score of 1 (Low Fat phobia)	Adjective of highest score of 5 (High Fat phobia)
<b>Adjectives related to physique</b>		
1.	Strong	Weak
2.	Attractive	Unattractive
3.	Shapely	Shapeless
<b>Adjectives related to personality traits</b>		
4.	Industrious	Lazy
5.	Has will power	No Will power
6.	Good self-control	Poor self-control
7.	Fast	Slow
8.	Having endurance	Having no endurance
9.	Active	Inactive
10.	Self-sacrificing	Self-indulgent
11.	Secure	Insecure
12.	High self esteem	Low self esteem
<b>Adjectives related to dietary habits</b>		
13.	Dislikes food	Likes food
14.	Under eats	Overeats

**Table 2. Type of fat phobia prevalent among the general public of Riyadh, KSA**

Type of Fat Phobia	Frequency of respondents (%)	Minimum score	Maximum score
Neutral fat phobia (< 2.5)	69 (18.4)	1	2.43
Mild fat phobia (2.50- 3.45)	242 (64.7)	2.50	3.43
Moderate fat phobia (3.46-4.39)	63 (16.8)	3.5	4.36
Total	374 (100)	1	4.36

**Table 3. Fat phobia scores distributed as per the gender of the study participants**

Fat phobic adjectives used	Gender based Mean Rank, Median (IQR)*		Mann Whitney U Test statistic	p value	Fat phobia Category with respect to Median Score
	Male (n= 183)	Female (n= 191)			
<b>Adjectives related to physique</b>					
Strong/ Weak	168.43;3 (2,3)	205.77;3(2,4)	13987.0	0.001*	Mild
Attractive / Unattractive	191.98;3 (2,3)	183.20;3 (2,4)	16656.0	0.413	Mild
Shapely / Shapeless	197.49;3 (2,3)	177.92;3(2,3)	15647.500	0.053	Mild
<b>Adjectives related to personality traits</b>					
Industrious / Lazy	181.03; 3 (2,4)	193.70;3 (3,4)	16293.0	0.242	Mild
Has will power / No Will power	174.15;3 (2,3)	200.29; 3 (2,4)	15034.0	0.016**	Mild
Good self-control / Poor self-control	186.17;3 (2,4)	188.77;3 (2,4)	17233.5	0.811	Mild
Fast / Slow	189.68;3 (3, 5)	185.41;3 (2,5)	17077.5	0.695	Mild
Having endurance / Having no endurance	187.89;3 (2,4)	187.13;3 (1,4)	17405.5	0.944	Mild
Active / Inactive	187.78;3 (2,4)	187.23;3(3,4)	17425.5	0.960	Mild
Self-sacrificing / Self-indulgent	191.26;2 (1,3)	183.90;2(1,3)	16788.5	0.491	Neutral
Secure/ Insecure	181.64;3 (1,3)	193.12;3(1,4)	16404.000	0.289	Mild
High self-esteem / Low self esteem	176.44;3 (1,3)	198.09;3(2,3)	15453.000	0.045**	Mild
<b>Adjectives related to dietary habits</b>					
Dislikes food / Likes food	188.47;4 (3,5)	186.57;4(2,5)	17298.5	0.860	Moderate
Under eats / Overeats	194.60;4 (3,5)	180.70;3(2,4)	16178.000	0.202	Moderate for males And Mild for Females

\*Numbers in parenthesis indicate IQR \*\* Statistically Significant at 5 % level

Among the respondents with Fatphobia, 82.9% had either education up to high school (49.8%) or up to a bachelor's degree (33.1%) level. It was noted that with the advancement in education, there was less prevalence of obesity stigma. The study revealed that the respondents' educational status significantly influenced fatphobia ( $\chi^2 = 7.966$ ;  $p = 0.047$ ).

## DISCUSSION

The distressing levels of obesity and overweight have roused the Gulf countries, including KSA, to develop country- and community-level health promotion policies in the last few years <sup>(16)</sup>. The prevalence of obesity increased in the Kingdom of Saudi Arabia (KSA) during the past three decades <sup>(17)</sup>.

Several social and psychological concerns related to overweight/obesity and the negative health consequences of obesity were raised <sup>(17)</sup>. However, there is no data on weight stigma/fatphobia/bullying in the KSA related to overweight or obesity <sup>(17)</sup>. A high prevalence of fatphobia of 81.55% was observed among the general public of Riyadh. This may be due to rapid changes in socio-economic sectors in KSA <sup>(18)</sup>, and corresponding socio-cultural transitions and globalization have affected the population's attitudes, beliefs, and behaviors <sup>(19)</sup>. Moreover, abnormal eating attitudes and phobia about weight gain are common in youngsters from GCC, including KSA <sup>(20)</sup>. In this regard, it was reported that a great majority of school children were exposed to fatphobia/weight stigma <sup>(21)</sup>, and the

Table 4. Socio-demographic determinants of fat phobia or obesity stigma

Determinant	Fat Phobia Score Median (IQR)	Details of the respondents*			Chi square	p -value
		Subjects without Fat phobia (n <sub>1</sub> = 69) (FPS 1- 2.49 or )	Subjects with Fat phobia (n <sub>2</sub> = 305) (FPS 2.5-5 )	Total		
<b>Age (years)</b>						
18-32	3.00 (2.50, 3.29)	40 (58.0)	134 (43.9)	174(46.5)	4.774	0.092
33-46	3.00 (2.64, 3.38)	15 (21.7)	99 (32.5)	114(30.5)		
47-60	2.92 (2.69, 3.30)	14 (20.3)	72 (23.60)	86(23.0)		
Total		69 (100)	305(100)	374(100)		
<b>Gender</b>						
Male	2.93 (2.57, 3.36)	38 (55.1)	145 (47.5)	183(48.9)	1.277	0.258
Female	3.07 (2.71, 3.29)	31 (44.9)	160 (52.5)	191(51.1)		
Total		69 (100)	305(100)	374(100)		
<b>Marital Status</b>						
Single	3.00 (2.57, 3.36)	34 (49.3)	132 (43.3)	166(44.4)	5.179	0.159
Married	3.00 (2.64, 3.29)	28 (40.6)	152 (49.8)	180(48.1)		
Widow	2.79 (2.21, 3.46)	5 (7.2)	8 (2.6)	13(3.5)		
Divorce	3.00 (2.79, 3.50)	2 (2.9)	13 (4.3)	15(4.0)		
Total		69 (100)	305(100)	374(100)		
<b>Education</b>						
Elementary	2.92 (2.21, 3.36)	13 (18.8)	31 (10.2)	44(11.8)	7.966	0.047**
High School	3.07 (2.64, 3.36)	24 (34.8)	152 (49.8)	176(47.1)		
Bachelor's degree	3.00 (2.57, 3.29)	24 (34.8)	101 (33.1)	125(33.4)		
Post graduate degree	2.71 (2.32, 3.21)	8 (11.6)	21 (6.9)	29(7.8)		
Total		69 (100)	305(100)	374(100)		

\*Numbers in parenthesis indicate percentage

\*\* Significant at 5 % level

reported values were higher in KSA than that reported from the USA<sup>(22)</sup> and Australia<sup>(23)</sup>. Stereotypes towards individuals with obesity, expressed by the respondents of the study, presented gender differences. The stereotypes such as willpower/no willpower, strong/weak, and high/low self-esteem indicated that the general population perceived obesity as a self-inflicted condition under an individual's control<sup>(24)</sup>. It was said that the beliefs concerning the cause of the incidence of obesity influence the nature of stigmatized attitudes towards obesity. Those who believe physiological and environmental factors lead to obesity have developed either positive or lesser negative attitudes<sup>(25)</sup>. Hence, intervention strategies and public health messages to reduce stigmatized attitudes towards persons with obesity are required to increase awareness regarding the etiological factors leading to obesity. The perceptions of body image start during the early adolescent age and reach a peak during early adulthood. It was reported that Eating Disorders is generally develop between 13 and 25 years<sup>(26)</sup>. During this time, the pressure to reduce weight from family and same aged peers are also at the peak. Such pressure may be developed from a fatphobia or obesity stigma. In the study, fatphobia is highly prevalent among the 18-32year age group. A study from KSA reported that negative body image and peer pressure are associated with anxiety among young adults<sup>(27)</sup>. It was observed that with the advancement in age, the proportion of respondents with fatphobia was reduced. However, age was not significantly associated with obesity stigma/fatphobia. A comparison with earlier studies is limited as there is a paucity of published evidence. However, on par with a study conducted among the German population,<sup>(28)</sup> age was not significantly associated with obesity stigma/fatphobia. In the present study, female respondents reported having more stigmas toward obese individuals than their male counterparts. This finding is on par with other studies in this area that weight stigma was mostly linked to the female gender<sup>(29)</sup>. Weight stereotypes seem to affect girls from an early age, and even young girls at three years develop negative attitudes against obesity, which increases with age<sup>(30)</sup>.

Girls have shown more negative stigma than boys if their parents emphasize the importance of a thin body and weight loss<sup>(30)</sup>. Therefore, such girls may learn to adopt negative attitudes against obesity and obese people<sup>(29)</sup>. The marital status of the respondents was not a significant determinant of weight stigma. Former studies reported that several married couples are prone to being overweight and obese due to reinforcing a high food intake<sup>(31)</sup>. It was found that the respondents' fatphobia scores were highly influenced by the educational status ( $\chi^2 = 7.966$ ;  $p = 0.047$ ), which is on par with the results of an earlier study<sup>(28)</sup>. Further, like the present study among the socio-demographic variables, educational status is the sole significant determinant of fatphobia/obesity stigma. Moreover, it was reported that with the advancement of education, obesity stigma and the development of stereotypes were changed from stigmatized negative attitudes to positive attitudes<sup>(31)</sup>.

## Conclusion

The study revealed that the general public's educational status could influence the level of fatphobia in a society. In spite of substantial consideration to the health consequences, prevention, and treatment of obesity, the stigma and prejudice surrounding obesity are often disregarded. The study results showed that Riyadh's general public is having both stigmatized negative and a positive non-stigmatized attitude toward obesity. Female respondents had higher negative perceptions of obesity than males. With an increase in the prevalence of obesity, there is a need to shed light on the importance of formulating a national strategy to increase awareness against obesity stigma among the population, particularly among females. The public health approach that aims to promote a healthy weight must consider weight discrimination by using fat-shaming messages. It was suggested that health campaigns focus on improving healthy lifestyle behavior without emphasizing body weight or size.

**Conflict of Interest Statement:** The authors have no declared conflict of interest

**Funding Statement:** The authors received no funding assistance during the course of research, data analysis and publication.

### Glossary of Abbreviations

**ATOP:** Attitude to Obese People

**IAT :** Implicit Association Tests

**KSA:** Kingdom of Saudi Arabia

**FPS :** Fat Phobia Score

**KAIMRC:** King Abdullah International Medical Research Centre

**IQR:** Inter Quartile Ranges

### REFERENCES

- Nowrouzi B. Weight Bias in the Workplace: A Literature Review. *Occup Med Heal Aff.* 2015; 03(03):206. doi:10.4172/2329-6879.1000206
- Brownell K, Puhl R, Schwartz M, and Rudd L. *Weight bias: Nature, consequences, and remedies.* New York, NY, US: Guilford Publications. 2005.
- Giel K, Thiel A, Teufel M, Mayer J, Zipfel S. Weight bias in work settings - A qualitative review. *Obes Facts.* 2010; 3(1):33–40
- Jasper C, Klassen M. Perceptions of Salespersons' Appearance and Evaluation of Job Performance. *Percept Mot Skills.* 1990;71(2):563–6
- Swift J, Tischler V, Markham S, Gunning I, Glazebrook C, Beer C. Are anti-stigma films a useful strategy for reducing weight bias among trainee healthcare professionals? Results of a pilot randomized control trial. *Obes Facts.* 2013;6(1):91–102
- Raves D, Brewis A, Trainer S, Han S, Wutich A. Bariatric Surgery Patients' Perceptions of Weight-Related Stigma in Healthcare Settings Impair Post-surgery Dietary Adherence. *Frontiers in Psychology.* 2016;7:1497
- Puhl R, Himmelstein M, Gorin A, Suh Y. Missing the target: including perspectives of women with overweight and obesity to inform stigma-reduction strategies. *Obesity science & practice.* 2017; 3 (1): 25-35
- Papadopoulous S, Brennan L. Correlates of weight stigma in adults with overweight and obesity: a systematic literature review. *Obesity.* 2015; 23:1743-1760
- Gudzune K, Bennett W, Cooper L, Bleich S. Perceived judgment about weight can negatively influence weight loss: a cross-sectional study of overweight and obese patients. *Prev Med.* 2014; 62:103-7
- Williams O, Annandale E. Weight Bias Internalization as an Embodied Process: Understanding How Obesity Stigma Gets Under the Skin. *Front Psychol.* 2019;29(10):953
- Jackson S, and Steptoe A. Association between perceived weight discrimination and physical activity: a population-based study among English middle-aged and older adults. *BMJ Open.* 2017; 7: 7(3):e014592
- Tomiyama A, Carr D, Granberg E, Major B, Robinson E, Sutin A, and Alexandra Brewis. How and why weight stigma drives the obesity 'epidemic' and harms health. *BMC Med.* 2018; 16:123
- Tomiyama A. Stress and obesity. *Ann. Rev. Psychol.* 2019; 70:703–718
- <http://biastoolkit.uconnruddcenter.org/toolkit/module-1/1-08-selfassessmenttools/1-0808-Fatphobia.pdf> .Viewed on 10-10-2017 at 10pm
- Bacon J, Scheltema K, Robinson B. Fat phobia scale revisited: the short form. *Int J Obes.* 2001; 25(2):252–7
- Anastasia Samara, Pernille Tanggaard Andersen, Arja R. Aro, "Health Promotion and Obesity in the Arab Gulf States: Challenges and Good Practices", *Journal of Obesity*, vol. 2019, ArticleID 4756260, 6 pages, 2019. <https://doi.org/10.1155/2019/4756260>
- Aljaadi A.M., Alharbi M. (2020) Overweight and Obesity Among Saudi Children: Prevalence, Lifestyle Factors, and Health Impacts. In: Laher I. (eds) *Handbook of Healthcare in the Arab World.* Springer, Cham. [https://doi.org/10.1007/978-3-319-74365-3\\_187-1](https://doi.org/10.1007/978-3-319-74365-3_187-1)
- Al-Nuaim, A. A., Al-Nakeeb, Y., Lyons, M., Al-Hazzaa, H. M., Nevill, A., Collins, P., & Duncan, M. J. (2012). The Prevalence of Physical Activity and Sedentary Behaviours Relative to Obesity among Adolescents from Al-Ahsa, Saudi Arabia: Rural versus Urban Variations. *Journal of nutrition and metabolism*, 2012,417589. <https://doi.org/10.1155/2012/417589>
- Bener A, Abou-Saleh MT, Dafeeah EE, Bhugra D. The prevalence and burden of psychiatric disorders in primary health care visits in qatar: too little time?. *J Family Med Prim Care.* 2015;4(1):89-95. doi:10.4103/2249-4863.152262
- Hamdan A (2009) Mental health needs of Arab women. *Health Care Women Int* 30(7):595–613. <https://doi.org/10.1080/07399330902928808>
- Fadia S. AlBuhairan, , Hani Tamim , Mohammad Al Dubayee, ShahlaAlDhukair, , Sulieman Al Shehri, , Waleed Tamimi, , Charbel El Bcheraoui, , MohiEldinMagzoub, , Nanne de Vries, , and Ibrahim Al Alwan.Time for an Adolescent Health Surveillance System in Saudi Arabia: Findings From “Jeeluna”.*Journal of Adolescent Health* 57 (2015) 263e269
- Lebrun-Harris, L.A., Sherman, L.J., Limber, S.P. *et al.* Bullying Victimization and Perpetration among U.S. Children and Adolescents: 2016 National Survey of Children's Health. *J Child Fam Stud* 28, 2543–2557 (2019). <https://doi.org/10.1007/s10826-018-1170-9>
- Jadambaa A, Thomas HJ, Scott JG, Graves N, Brain D, Pacella R (2019). The contribution of bullying victimisation to the burden of anxiety and depressive disorders in Australia. *Epidemiology and Psychiatric Sciences* 1–23. <https://doi.org/10.1017/S2045796019000489>
- Marini M,Sriram N,Schnabel K,Maliszewski N,Devos T,Ekehammar B,Alia I,and Schnall S.Overweight people have low levels of Implicit weight bias,but overweight nations have high levels of implicit weight bias.*PLoS One.*2013;8(12):e83543
- Puhl RM, Heuer CA. The stigma of obesity: A review and update. *Obesity.* 2009;17(5):941–64
- Maria Rosaria Juli Perception of body image in early adolescence. An investigation in secondary schools. *PsychiatrDanub.* 2017 Sep;29(Suppl 3):409-415.
- Abou Abbas O, AlBuhairan F (2017) Predictors of adolescents' mental health problems in Saudi Arabia: findings from the Jeeluna® national study. *Child Adolesc Psychiatry Ment Health* 11:52. <https://doi.org/10.1186/s13034-017-0188-x>

29. Sikorski C, Luppia M, Braehler E, König H-H, Riedel-Heller SG (2012) Obese Children, Adults and Senior Citizens in the Eyes of the General Public: Results of a Representative Study on Stigma and Causation of Obesity. *PLoS ONE* 7(10): e46924. doi:10.1371/journal.pone.0046924
30. Puhl RM, Andreyeva T, Brownell KD . Perceptions of weight discrimination: prevalence and comparison to race and gender discrimination in America. *Int J Obesity*. 2008; 32: 992–1000
31. Jackson TD, Grilo CM, Masheb RM. Teasing history, onset of obesity, current eating disorder psychopathology, body dissatisfaction, and psychological functioning in binge eating disorder. *Obes Res*. 2000; 8:451–458
32. Phul R,M., Moss-Racusin C,A., Schwartz M,B et.al. Weight stigmatization and bias reduction; perspectives of overweight and obese adults. *Health Education Research*.2007;23;347-358

\*\*\*\*\*