

## Fatphobia: an Emerging Obsession among Students of Private Medical College, Lahore, Pakistan

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### ABSTRACT:

**Background and Objectives:** Increasing awareness about obesity and its complications has led young people to become more concerned about their diet. Therefore fatphobia has rapidly emerged globally especially in young people which is harmful for health. Hence, we aimed to measure the level of fat phobia as well as compare it among students with respect to academic classes and gender.

**Methodology:** This was a cross sectional study carried out in CMH Medical and Dental College, Lahore. Non-probability consecutive sampling was used to collect data using standardized questionnaire. Mean, median and interquartile ranges were used to describe the data whereas, Mann Whitney U test and Kruskal Wallis test were used to compare average difference in FPS score among gender and classes respectively.

**Results:** The mean age of 286 students was  $21.62 \pm 1.33$  years (Range 18 – 26) and 190 (66.4%) were females. The median (IQR) total score of fat phobia was high overall 3.25 (0.79) with range of 1.79-5.00. There was statistically insignificant difference in median (IQR) total score of fat phobia among males 3.36 (0.79) and females 3.21 (0.79) ( $p$ -value = 0.122). However, a highly significant difference of median (IQR) total score of fat phobia among 1<sup>st</sup> year students 2.92 (0.53), 2<sup>nd</sup> year students 3.14 (0.86) and 3<sup>rd</sup> year students 3.46 (0.77) was observed ( $p$ -value= 0.000).

**Conclusion:** The current study suggests that undergraduate medical students have moderately high fat phobia towards obese people. There was a moderately high fat phobia among males and females as well as students of all the years.

**Keywords:** Obesity, Fat phobia, dietary pattern, medical students.

### INTRODUCTION

Overweight and obesity are among the most difficult health and societal issues of 21st century.<sup>1-3</sup> The prevalence of obesity is rising at a fast pace globally. According to World Health Organization (WHO) in 2008, 1.5 billion adult population (35%) were overweight and of these more than 200 million males and about 300 million females were obese.<sup>4</sup> Adolescent obesity is another significant health problem and its prevalence is different in different geographical areas.<sup>5-7</sup> Literature has established it so far that overweight and obese people are discriminated generally in viewpoint of society and judged merely on the basis of their weight. The incidence of obesity has increased as much as 66% since 1995 in the developed countries which explains very clearly the reason of perceived judgment and societal issues associated with this problem.<sup>8</sup>

Obesity is not only associated with a number of diseases such as hyperlipidemia, hyperinsulinemia,

cardiovascular diseases and hypertension but it is also an established factor for objectification and low self esteem and low confidence among young adults.<sup>9, 10</sup> With increasing awareness about obesity and its complications, the youngsters are becoming more and more concerned about their dietary routine. This trend of fat phobia and fear of eating anything is becoming commoner rapidly over time. The fear of getting fat is hence, increasing the number of individuals with anorexia nervosa. This exaggerated fat phobia has led to eating lesser and lesser with passage of time, diminishing basic nutrients and enough caloric requirement. Therefore, just like obesity, fat phobia has also become equally serious problem specially for individuals in their younger age.<sup>11</sup>

Lee S. has detailed the role of media and society in making fat phobia an obsession. He stated that not only western standards of slender body are far from practical but many Asian countries such as China,

Korea, India and Hong Kong have also made unhealthy and unrealistic expectations for body type. His review reported the prevalence of 3-10% of young females who ate so little to damage their health. This shows that both extremes of BMI i.e. obesity as well as anorexia nervosa pose health problems and various complications mainly due to unhealthy diet regimes.<sup>12,13</sup>

Where keeping weight adjusted in healthy range of BMI is essential, eating less, being malnourished and dropping weight to underweight class of BMI is also unsafe for health. Majority of individuals who struggle to keep their weight maintained also suffer from stress and anxiety and experience unhealthy feelings such as pessimism, complex, lack of confidence in self and low self esteem. This further induces fat phobia and hence more restricted diets that leads to health issues.<sup>14</sup> Hence, it is critical to quantify the level of fat phobia and its effect on youngsters in our community. The current study was designed to measure the level of fat-phobia in students of CMH Medical and Dental College Lahore and to compare the level of fatphobia among students with respect to class and gender.

**METHODOLOGY**

This was a cross sectional study carried out in CMH Medical and Dental College, Lahore, from August 1,

2016 to October 1, 2016. All students of MBBS present during one week for data collection from 30<sup>th</sup> August 2016 to 7<sup>th</sup> September 2016 were included in the study. The Non-probability consecutive sampling was used to collect data from 1<sup>st</sup> year, 2<sup>nd</sup> year and 3<sup>rd</sup> year students. The standardized questionnaire for Fat phobia, published and available freely by the Rudd Center for Food Policy and Obesity, Yale University was used to measure the level of fat phobia using score guidelines as provided by developers of this questionnaire. The questionnaire had 14 items on Likert scale ranging from 1-5 (Scheme attached at annexure), related to level of activity, perception about their own body, eating choices etc. and the total score was calculated by taking average of these items.

Students were briefed thoroughly about the purpose of this study and procedure to fill the questionnaire. Data was collected after taking their written consent? The data was entered and analyzed in SPSS version 20. Mode for gender and mean with standard deviation for age was reported. Kolmogorov Smirnov test was applied to see the normality of data. Hence, median scores of each item with Inter Quartile Range (IQR) was noted for average opinion of students against each question. Mann-Whitney U test was used to see gender-wise mean difference in individual items as well as total score. Kruskal Wallis test was used to see academic class-wise mean difference in individual items as well as total score. A p-value < 0.05 was considered statistically significant.

**Table 1:** Median Fat Phobia Score (Item Wise and Total).

Fat Phobia Scale Items (FPS)	Overall	Kolmogorov-Smirnov	
	Median (IQR)	Statistic	p-value
Lazy	4.00 (1.00)	0.2	< 0.001
No Will Power	3.00 (1.00)	0.2	< 0.001
Attractive	3.00 (2.00)	0.182	< 0.001
Good Self Control	3.00 (2.00)	0.169	< 0.001
Fast	2.00 (2.00)	0.202	< 0.001
Endurance	3.00 (2.00)	0.209	< 0.001
Active	2.00 (1.00)	0.225	< 0.001
Weak	3.00 (2.00)	0.167	< 0.001
Self Indulgent	3.00 (2.00)	0.175	< 0.001
Dislikes Food	1.00 (2.00)	0.29	< 0.001
Shapeless	4.00 (2.00)	0.223	< 0.001
Under eats	2.00 (2.00)	0.252	< 0.001
Insecure	4.00 (1.00)	0.211	< 0.001
Low Self Esteem	3.00 (2.00)	0.174	< 0.001
The total score for fat phobia	3.25 (0.79)	0.103	< 0.001

**RESULTS**

A total of 286 undergraduate medical students participated in this study. The mean age of students was 21.62 ± 1.33 (Range 18-26 years) and majority of them were females (190, 66.4%). The data against fat phobia scale items was found to be non-normal using Kolmogorov Smirnov test (**Table 1**). The median (IQR) total score of fat phobia among students was high overall 3.25 (0.79) with minimum and maximum scores noted as 1.79 and 5.00 respectively. Overall, students thought fat people were lazy (4.00, 1.00), had no will power (3.00, 1.00), were weak (3.00, 2.00), self indulgent (3.00, 2.00), shapeless (4.00, 2.00), insecure (4.00, 1.00), had low self esteem (3.00, 2.00). The median (IQR) of subject's opinion about attractiveness in fat people was 3 (2), good self control was 3 (2), being fast was 2 (2), endurance 3 (2), being active was 2 (1). Few subjects thought fat people dislike to eat 1 (2) and they under eat 2 (2). Overall, there was a high fat phobia among students and students had low opinion about good qualities of fat individuals (**Table 1**).

The median (IQR) total score of fat phobia among males was 3.36 (0.79) and among females was 3.21 (0.79) and this difference was statistically

insignificant (p-value = 0.122). Mann Whitney U test showed that there was a statistically significant median difference of opinion between male and female students regarding attractiveness and weakness of fat people (p-values = 0.049 & 0.015) (**Table 2**). The median (IQR) total score of fat phobia among 1<sup>st</sup> year students was 2.92 (0.53), 2<sup>nd</sup> year students was 3.14 (0.86) and 3<sup>rd</sup> year students was 3.46 (0.77) and this difference was highly significant (p-value = 0.000). A highly significant difference of opinion was seen among different years of study in total fat phobia score and almost all items of fat phobia scale using Kruskal Wallis test (**Table 3**).

**DISCUSSION**

People specially youngsters have set impractical and unhealthy standards for body shape these days. Recent literature has established the

**Table 2:** Gender Difference in Median Fat Phobia Score (Item Wise and Total).

Fat Phobia Scale Items (FPS)	Male	Females	Mann-Whitney U test
	Median (IQR)	Median (IQR)	p-value
Lazy	4.00 (1.00)	4.00 (1.00)	0.47
No Will Power	3.00 (2.00)	3.00 (1.00)	0.549
Attractive	2.00 (2.00)	3.00 (2.00)	0.049*
Good Self Control	3.00 (2.00)	3.00 (2.00)	0.648
Fast	2.00 (2.00)	2.00 (1.00)	0.077
Endurance	3.00 (2.00)	3.00 (2.00)	0.091
Active	2.00 (1.00)	3.00 (1.00)	0.284
Weak	3.00 (2.00)	3.00 (1.00)	0.015*
Self Indulgent	3.00 (2.00)	3.00 (2.00)	0.089
Dislikes Food	1.00 (2.00)	1.00 (2.00)	0.508
Shapeless	4.00 (2.00)	4.00 (3.00)	0.165
Under eats	2.00 (2.00)	2.00 (2.00)	0.405
Insecure	4.00 (1.00)	3.00 (2.00)	0.713
Low Self Esteem	3.00 (2.00)	3.00 (1.00)	0.815
The total score for fat phobia	3.36 (0.79)	3.21 (0.79)	0.122

**Table 3:** Difference in Median Fat Phobia Score (Item Wise and Total) among Years of Study.

Fat Phobia Scale Items (FPS)	1 <sup>st</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	Kruskal Wallis
	Median (IQR)	Median (IQR)	Median (IQR)	p-value
Lazy	3.00 (1.00)	4.00 (1.00)	4.00 (1.00)	< 0.001
No Will Power	2.00 (1.00)	3.00 (1.00)	3.00 (1.00)	0.167
Attractive	2.00 (2.00)	3.00 (2.00)	2.00 (1.00)	0.016
Good Self Control	3.00 (1.00)	3.00 (2.00)	3.00 (1.00)	0.09
Fast	2.00 (2.00)	2.00 (1.00)	2.00 (2.00)	< 0.001
Endurance	3.00 (3.00)	3.00 (2.00)	3.00 (2.00)	0.213
Active	3.00 (1.00)	3.00 (2.00)	2.00 (2.00)	< 0.001
Weak	3.00 (2.00)	3.00 (2.00)	3.00 (2.00)	0.058
Self Indulgent	2.00 (2.00)	3.00 (2.00)	3.00 (2.00)	0.016
Dislikes Food	3.00 (2.00)	2.00 (1.00)	1.00 (1.00)	< 0.001
Shapeless	3.00 (3.00)	4.00 (2.00)	4.00 (2.00)	0.001
Under eats	2.50 (2.00)	2.00 (2.00)	2.00 (2.00)	< 0.001
Insecure	2.00 (1.00)	3.00 (1.00)	4.00 (2.00)	0.002
Low Self Esteem	3.00 (1.00)	3.00 (2.00)	4.00 (2.00)	0.014
The total score for fat phobia	2.92 (0.53)	3.14 (0.86)	3.46 (0.77)	< 0.001

association of media showing thin female body and strong male body as perfect with psychological stress leading to eating less, unhealthy and low esteem in self.<sup>13,15,16</sup> This demands modification and reconsideration of rationale BMI contrary to what is considered in media and our society.<sup>13,15</sup>

This situation has induced significant fat phobia among individuals that directly or indirectly causes stress, anxiety and lack of confidence. No study so far has focused on this aspect in Pakistan. Therefore we aimed to quantify the level of fat phobia among medical students of CMH Medical and Dental College Lahore.

A total of 286 undergraduate medical students they were selected or voluntarily participated in this study. The mean age of students was  $21.62 \pm 1.33$  years and majority of them were females (190, 66.4%). A number of studies have reported that females, particularly of young age are more prone to eating less to get slender body shape. Lee. S, reported that prevalence from various community surveys show a prevalence of 3-10% of young females who eat alarmingly little and damage their health<sup>17</sup> Patenberg B. et al, also did a study in 2012 to evaluate the perception of medical good students towards overweight and obesity. They recruited 671 medical students and the mean age of their sample was  $23.1 \pm 2.88$  with minimum and maximum ages of 18 and 45 years. The mean age in this study was very similar to our findings.<sup>8</sup>

Another study done in Germany surveyed the fat phobia scale on psychometric levels on overall public. In this study, 47.7% were females and 28.0% subjects were of 18 – 40 years old. For fat phobia scale they found that mean FPS score for the overweight vignette in the total sample was  $3.62 \pm 50.49$  showing a elevated level of negative states of mind towards overweight and obesity.<sup>4</sup> In our study, the median (IQR) score of fat phobia among students was high generally 3.25 (0.79) with minimum and maximum scores noted as 1.79 and 5.00 respectively. The median (IQR) score of fat phobia among males was 3.36 (0.79) and among females was 3.21 (0.79) and this difference was statistically insignificant ( $p$ -value = 0.122).

Patenberg B. detailed comparative findings that the mean FPS score for the overweight vignette was overall high, and statistically more significant compared to the typical weight vignette (3.65/6.45 versus 2.54/6.38,  $z = 21.438$ ,  $p < 0.001$ ).<sup>8</sup> Puhl R. et al, also assessed perception about obesity among dieticians in 2007. In that study there were 92% females; mean age  $23.1 \pm 5.4$  years and almost all individuals belonging to all categories depicted moderately high level of fat phobia (mean = 3.7).<sup>4</sup> All these reviews, like our study stress that individuals have a negative perception towards fat and furthermore have a poor comprehension about eating routine and general healthy way of life. It

is subsequently important to spread awareness in our community by health organizations and media about the complications of obesity, as well as the potential dangerous outcomes of crash diet plans and unhealthy eating habits.

It is **concluded** that our study shows that medical students have moderately high fat phobia towards obese people. There was a moderately high fat phobia among males and females as well as students of all years of study. Fat phobia may contribute to many far-reaching health hazards including stigmatization of obese individuals, setting impractical standards for healthy body shape, adopting unhealthy lifestyle and taking inadequate nutrition. This is therefore important to aware public of practical weight standards and healthy eating habits. The role of media and health organizations in this regard is inevitable. More studies should be done to investigate other aspects of fat phobia. For its prevention and control.

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#### Author's Contribution

TA: Data collection, write-up. MAC: Literature review. AH: Data analysis and write up. HR: Literature search and data entry. SÇ: Questionnaire and literature search.

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#### Conflict of Interest

There is no conflict of interest.

#### REFERENCES

1. Mansoori N, Nisar N, Shahid N, Mubeen SM, Ahsan S. Prevalence of obesity and its risk factors among school children in Karachi, Pakistan. *Tropical doctor*, 2018; 48 (4): 266-9.
2. Amin F, Fatima SS, Islam N, Gilani AH. Prevalence of obesity and overweight, its clinical markers and associated factors in a high risk South-Asian population. *BMC Obesity*, 2015; 2 (1): 16.
3. Nazli R, Akhtar T, Lutfullah G, Khan MA, Lutfullah G, Haider J. Prevalence of obesity and associated risk factor in a female population of rural Peshawar-Pakistan. *Khyber Med Uni J*. 2015; 7 (1): 19-24.
4. Stein J, Lupp M, Ruzanska U, Sikorski C, König H-H, Riedel-Heller SG. Measuring negative attitudes towards overweight and obesity in the german population—psychometric properties and reference values for the german short version of the fat phobia scale (FPS). *PLOS One*, 2014; 9 (12): 1-18.
5. Musaiger AO. Overweight and obesity in the Eastern Mediterranean Region: can we control it? *East Mediterr Health J*. 2004; 10 (6): 789-93.

6. Reilly JJ. Obesity in childhood and adolescence: evidence based clinical and public health perspectives. *Postgrad Med J.* 2006; 82 (969): 429-37.
7. Aziz R, Sohail S. Prevalence of obesity related health risk factors in adult population. *Int J Biol Res.* 2016; 4 (2): 62-7.
8. Pantenburg B, Sikorski C, Lupp M, Schomerus G, König H-H, Werner P, et al. Medical students' attitudes towards overweight and obesity. *PLoS One*, 2012; 7 (11): 1-8.
9. Cole TJ, Bellizzi MC, Flegal KM, Dietz WH. Establishing a standard definition for child overweight and obesity worldwide: international survey. *BMJ.* 2000; 320 (7244): 1-6.
10. Delavari A, Kelishadi R, Forouzanfar MH, Safaei A, Birjandi F, Alikhani S. The first cut-off points for generalized and abdominal obesity in predicting lipid disorders in a nationally representative population in the Middle East: The National Survey of Risk Factors for Non-Communicable Diseases of Iran. *Arch Med Sci.* 2009; 5 (4): 542-9.
11. Vroman K, Cote S. Prejudicial attitudes toward clients who are obese: Measuring implicit attitudes of occupational therapy students. *Occup Ther Health Care*, 2011; 25 (1): 77-90.
12. Wang Y, Ding Y, Song D, Zhu D, Wang J. Attitudes Toward Obese Persons and Weight Locus of Control in Chinese Nurses: A Cross-sectional Survey. *Nurs Res.* 2016; 65 (2): 126-32.
13. Puhl RM, Luedicke J, Heuer C. Weight-based victimization toward overweight adolescents: observations and reactions of peers. *J School Health*, 2011; 81 (11): 696-703.
14. Raisborough J. Conclusion: Fat Sensibility or Moral Panic? *Fat Bodies, Health and the Media*: Springer; 2016: p. 157-65.
15. Leit RA, Pope Jr HG, Gray JJ. Cultural expectations of muscularity in men: The evolution of Playgirl centerfolds. *Int J Eat Disord.* 2001; 29 (1): 90-3.
16. Puhl R, Gold J, Luedicke J, DePierre J. The effect of physicians' body weight on patient attitudes: implications for physician selection, trust and adherence to medical advice. *Int J Obes.* 2013; 37 (11): 1415.
17. Lee S. Fat phobia in anorexia nervosa: Whose obsession is it. *Eat Disord Cult Trans.* 2001: 40-54.