

## Estimates of gelotophobia and perceived stress among obese individuals

Mubeen Akhtar, Sadia Maroof, Shamyle Rizwan Khan

### Abstract

**Objective:** The present research was carried out to estimate gelotophobia among obese individuals. Perceived stress and differences on socio-demographic factors were also studied.

**Method:** The survey design cross-sectional study was conducted from January to June in 2018. A sample of 70 consenting participants (men = 22, women = 48) with BMI  $\geq 25$  were recruited through purposive sampling. The instruments of Gelophob<15> and Perceived Stress Scale (PSS) were used to assess the level of gelotophobia and level of stress in the sample. Demographic details of sample were also recorded to achieve study objectives.

**Result:** The estimate of gelotophobia among obese individuals in the current study showed that 45(64.2%) majority sample had moderate level of gelotophobia, while 7(10%) of the sample had high level of gelotophobia. Statistically significant differences were observed in the level of gelotophobia among individuals having different levels of socio-economic status ( $p < .05$ ) and with history of being ridiculed by peers ( $p < .05$ ). However, the present study did not show any significant demographic difference in perceived stress ( $p > .05$ ).

**Conclusion:** The findings of the study could provide evidence in favour of developing and implementing suitable intervention programmes to help control risk of gelotophobia among obese individuals. The study could also assist in creating awareness and understanding about harmful consequences of bullying and nurturing a healthier narrative of conversations and humour among the youth.

**Keywords:** Humor fear, obesity, BMI, body weight. (JPMA 71: 81; 2021) DOI: <https://doi.org/10.47391/JPMA.635>

### Introduction

Gelotophobia is identified as an individual's fear of appearing ridiculous or being laughed at in a social group.<sup>1</sup> This term has been identified as a separate concept and being theorized and studied empirically since only the present decade.<sup>1,2</sup> Originally highlighted in clinical context, it is now identified and researched in the normal population as another form of fear based response after the construction of a reliable and valid quantitative assessment tool, 'GELOPH<15>'.<sup>2,3</sup> Gelotophobia is conceptualized as a continuum ranging from the absence of fear to presence of a strong one, even in response to laughter motivated by compassion.<sup>4</sup>

The core symptoms of gelotophobia include getting suspicious when hearing others laughing, relating the laughter by others to oneself, or feeling unease when hearing others laughing that might also impair body control.<sup>2</sup> The person believes that something essential is wrong with him/her, therefore, it is inevitable that he/she makes a funny impression on others. A key feature in establishing the uniqueness of gelotophobia has been its significant distinction from other already studied and closely associated concepts. Considerable evidence suggested that even though gelotophobia shares features with personality dimensions and variables of social anxiety,

COMSATS University Islamabad, Pakistan.

**Correspondence:** Mubeen Akhtar e-mail: [mubeen.akhtar@comsats.edu.pk](mailto:mubeen.akhtar@comsats.edu.pk)

shame proneness, timidity, low self-esteem, and insecurity, it cannot be entirely explained by either.<sup>5,6</sup>

Weight based teasing is globally identified as common among overweight and obese adolescents and young adults.<sup>7</sup> Based on the WHO expert consultative committee suggestion of body mass index (BMI) cut-offs for South Asian population, a BMI equals to or greater than 25 is categorized as 'obesity', wherein BMI is calculated as a person's weight in kilograms divided by the square of his/her height in meters.<sup>8</sup> Obesity and overweight are stigmatized in most populations and are accepted as well as promoted as a subject of ridicule. Such stigmatization and teasing places its victims at risk to internalize a negative self-concept and decline in their psychological health.<sup>9</sup> Weight-based teasing from peers and parents in adolescence can also result in weight gain, unhealthy weight control and eating to cope 15 years later.<sup>10</sup>

Low body weight and slim figures are increasingly highlighted as merit for social and even personal approval, and pressure to conform to achieve an ideal body type has considerably increased in the collectivist socio-cultural context of Pakistan.<sup>11</sup> Owing to this identified vulnerability of obese population in Pakistan towards developing gelotophobia, it is of prime significance to bring forth empirical data that facilitates its comprehension in the present sociodemographic relevance.

Although existing literature indirectly identifies relation between gelotophobia and stress, however, the same has not been studied among stigmatized obese population in the present region. A contextualized understanding of this connection is deemed vital for identifying suitable coping and preventive strategies against gelotophobia for clinical and non-clinical populations. The prime objectives of the present study were to find an estimate of gelotophobia among obese individuals, and to identify difference in levels of gelotophobia and stress across sociodemographic factors of socioeconomic status, history of being teased by peers, age, gender, and marital status.

## Subjects and Methods

The current study used cross-sectional survey research design to achieve stated objectives. The study was conducted from January to June in 2018 in Islamabad. Data was collected from multiple formal and informal settings, such as, educational institutions, hospitals, and restaurants. Sample consisted of individuals who were overweight (BMI  $\geq 25$ ) and have age  $\geq 17$  years. This study used purposive sampling with inclusion and exclusion parameters for sample selection. Concerning sample size estimation, Hair and his colleagues regarded five respondents per variable to be considered as the lower limit but the most acceptable is 10:1 ratio (10 samples for one variable).<sup>12</sup> To solicit data, 200 participants were approached, out of which 70 met the inclusion criteria of age and weight and were taken as study sample, including both men ( $n=22$ ) and women ( $n=48$ ). The exclusion criteria comprised of any diagnosed medical condition, pregnancy, currently being on medication (for the treatment of any general medical condition) and having a family history of obesity.

Ethical approval for the study was taken from departmental ERC (ethical review committee) at the university where this research was carried out.

Screening of approached sample was done by recording participants' weight and height on a weighing machine and stadiometer respectively and calculating their BMI. Informed consent was requested from selected participants after they were briefed about their rights as study sample, confidentiality of their responses, minimum risk of participation and right to withdraw. Consenting participants then completed the provided survey booklet entailing demographic questions, GELOPH<15><sup>13</sup> and Perceived Stress Scale.<sup>14</sup> Average recorded survey completion time was 10-15 minutes.

Description of the tools utilized: GELOPH<15>, a self-report instrument is used to identify levels of gelotophobia. It has 15 statements to be rated in degrees of agreement or disagreement by the respondents on a 4-point scale that

ranges from 1 (strongly disagree) to 4 (strongly agree). Total score is computed by adding score on all the items which ranges 15-60. High score means high level of gelotophobia and vice versa. In a past research, all items of the GELOPH were translated to 42 different local languages of the collaborator. From 73 countries, 22,610 participants completed the GELOPH. Across all samples, the reliability was high (mean alpha of 0.85).<sup>15</sup>

Perceived Stress Scale is the most widely used tool for measurement of perceived stress.<sup>14</sup> It is a measure of degree to which situations in one's life are appraised as stressful. Items are designed to identify how unpredictable, uncontrollable, and overloaded respondents find their lives to be. The questions in this scale ask about participants' feelings and thoughts during past one month. In each case, participant will be asked to indicate how often they felt or thought a certain way. A total of ten items are scored on a 4-point Likert scale. Scores are obtained by reversing responses (0=4, 1=3, and so on) to the four positively stated items (items 4, 5, 7, & 8). Total added score ranges from 0-40, with 0-13 considered low stress, 14-26 moderate stress, and 27-40 high perceived stress.

Demographic Data Sheet was developed by the researcher to record sample's sociodemographic information of height, weight, BMI, age (late adolescents, young adults, middle adulthood and late adulthood), gender, education, marital status (single, in a relationship, married), self-reported socioeconomic status (elite class, upper middle class, middle class), occupation (housewife, student, teacher, doctor, manager, self-employed, private job, strugglers), exercise adherence (including walking, running, jogging etc), number of times they examined self in the mirror per day, and recalled number of incidents when they were teased/ridiculed in the past.

The collected data was entered into SPSS software version 21. Descriptive analyses comprising of skewness and kurtosis calculation, t-test, ANOVA, and correlation analyses were used to fulfil research objectives. Skewness and kurtosis values on both variables were well within range to declare the data to be normally distributed. The level of significance for all statistical measures was kept at  $p=0.05$ .

## Results

The sample consisted of 70 participants (22 men and 48 women, 31.43% and 68.57% respectively) ranging from 17-56 years with 41(58.6%) individuals 41(58.6%) aged between 17-26 years, 20(28.6%) between 27-36 year and 9(12.8%) individuals aged between 37-56 years. Majority of the participants belonged to the student population. Those who did not engage in any physical health exercise (which includes walking, running, jogging etc.) were 41 (58.6%)

**Table-1:** Level of Gelotophobia in Obese Individuals (n = 70).

Level of Gelotophobia	n (%)
Low	18 (25.8)
Moderate	45 (64.2)
High	7 (10)

**Table-2:** Gelotophobia and Perceived Stress for Socio-economic Status of Participants (n=70).

Variables	Elite class (n= 13) Mean±SD	Upper middle (n= 24) Mean±SD	Middle class (n= 33) Mean±SD	F	p-value
Gelotophobia	25.92±9.67	36.83±13.09	35.33±9.82	4.52	0.01
Perceived Stress	21.69±3.63	25.38±6.06	23.00±6.14	2.04	0.14

**Table-3:** Gelotophobia and Perceived Stress for Frequency of Being Teased (n=70).

Variables	Always (n= 4) Mean±SD	Often (n=14) Mean±SD	Sometimes (n=13) Mean±SD	Seldom (n=10) Mean±SD	Never (n=29) Mean±SD	F	p-value
Gelotophobia	37.00±11.19	42.07±12.30	35.69±10.69	30.00±13.44	30.55±9.28	3.12	0.02
Perceived Stress	24.25±6.29	26.64±5.63	24.54±6.93	21.20±6.28	22.38±4.76	1.88	0.12

while 29 (41.43%) reported to exercise regularly. Out of 70, 29(41.43%) participants reported no history of being teased in the past. However, more than half of entire sample (n=41, 58.6%) reported of being teased or ridiculed by their peers by varying frequency of occurrence (almost always=4(5.7%) often=14(20%) sometimes=13(18.6%) seldom=10(14.3%).

The alpha reliability coefficient of GELOPH<15> scale for the present study was calculated to be highly reliable with a value of 0.93 whereas for Perceived Stress Scale (PSS) it was found 0.73, which is acceptable. Data collected using these reliable measures were then used to carry out further analyses.

Table 1 illustrates the percentage of sample who reported experiencing different levels of gelotophobia on the GELOPH<15> scale. Sample total scores falling at or below 25th percentile indicated low level of gelotophobia, scores falling between 25th and 75th percentile showed moderate level, while scores falling at or above 75th percentile showed high level of gelotophobia. Frequencies and percentages in each category revealed a symmetric distribution of scores, where majority sample was identified experiencing moderate levels of gelotophobia 45(64.2%), fewer were in low level range 18(25.8%), and the least in high level range 7(10%).

Table 2 illustrates statistically significant differences between the elite, upper middle and middle socioeconomic classes in reported means on GELOPH<15> for gelotophobia (p=0.01). Among three socioeconomic groups, the highest mean score for gelotophobia was in

upper middle class 36.83 ± 13.09, second highest was in middle class (Mean=35.33 ± 9.82), and the lowest in elite class (Mean=25.92 ± 9.67). Results from post-hoc analysis revealed that elite class experienced statistically significantly lesser gelotophobia than both, upper middle class (i-j=10.91, p<0.05) and middle class (i-j=9.41, p<0.05). There is no statistically significant difference identified among sample from different socio-economic status on Perceived Stress Scale score.

Results in table 3 illustrate statistically significant differences in degree of gelotophobia experienced among individuals who reported history of being teased or ridiculed in the past by peers in varying frequency (p=0.02).

Individuals who reported to be teased often in the past have highest mean score on gelotophobia (Mean=42.07±12.30). Moreover, post-hoc analyses revealed that participants who had history of often being teased by peers experienced statistically significantly higher gelotophobia than those who reported no history of being teased (i-j=11.52, p<0.05). No statistically significant difference was seen among the groups on perceived stress. Mean differences for gelotophobia and perceived stress were statistically insignificant for all other demographic variables studied in the sample including gender, marital status, occupation and exercise routine.

Correlation analysis showed a significant positive correlation between gelotophobia and perceived stress (r=.57, p=0.03) indicating an increase in gelotophobia is associated with an increase in perceived stress level and vice versa.

## Discussion

Weight based stigmatization is observed consistently across regions and cultures and is often highlighted in literature for its detrimental influence on social and mental health of the individual. A multinational study involving 73 countries including a sample from Pakistan provided evidence for existence of gelotophobia in various places of the world.<sup>15</sup> Gelotophobia is recently been associated with physical appearance of the fearful person. Weight based teasing adds risk to a heightened experience of gelotophobia, and further lead to isolation seeking behaviour among other emotional and psychological disadvantages.<sup>17</sup> Owing to the dearth of contextually relevant literature on same picture in Pakistan, the present study aimed to assess how present population sample with obesity experience gelotophobia.

The achieved objectives of the present study supported

prevalence of medium to high levels of gelotophobia in two-third of the sample. On one hand, this finding asserted the presence of gelotophobia in normal population of Pakistan; on the other hand, it highlighted lack of contextual understanding as our blind spot. The need to overcome this blind spot in both clinical and non-clinical settings is significant in light of the risk, it adds to wellbeing of the youth.<sup>17</sup> Similar results were seen in a recent study concerning gelotophobia in India, more than one fourth of the participants (27.70 %) exceeded a cut-off score indicating a slight expression of gelotophobic symptoms.<sup>18</sup>

The current study found participants who had history of often being teased by peers experienced statistically significantly higher gelotophobia than those who reported no history of being teased. Weight based stigmatization is a dynamic social and interpersonal phenomenon, where it is not always the objective weight, which attracts teasing and ridicule from others, rather it is the perception of weight and body image in a person, which places them in a higher probability to experience stigmatization or teasing, and be sensitive towards it.<sup>19,20</sup> Recent studies have identified that gelotophobia is associated with lower degree of body appreciation, appearance control beliefs, and higher body surveillance and body shame.<sup>21</sup> Thus objective weight and physical appearance as well as subjective interpretation of both relates to the experience of gelotophobia. A person with overweight might experience lower levels of gelotophobia if they have a higher appreciation and satisfaction towards their physical attributes. However, development of a healthy body image would be hindered with each experience of being teased and ridiculed, as that is linked with higher gelotophobia symptoms in sample of the study. Current study found no statistically significant difference on perceived stress between the individuals with a past history of being ridiculed or teased.

The role of social norms is highlighted in this study, where acceptable standards of physical appearance dictate the perception and interpretation of weight and body form, and whether it is acceptable to target certain weight and body types as subject for teasing, ridicule or stigmatization. Study results showed that obese individuals from elite socioeconomic group experience low gelotophobia as compared to other, might indicate that financial security or status protects against fear of being laughed at, or that the elite population follow a different set of social norms altogether where obesity is not stigmatized.

According to the findings of current study, there are no statistically significant gender differences on gelotophobia and perceived stress among obese individuals. This is consistent with the result found in a study with a sample

from India, a region which is culturally more relevant to compare.<sup>18</sup> However, men scored slightly higher than women on Geloph scale, while women scored slightly higher than men on PSS. Previous study showed that women are more fragile towards mockery than men. In a past study individuals with a feminine psychological gender scored higher on gelotophobia as compared to masculine psychological gender.<sup>22</sup> A recent study with adolescents revealed more pronounced weight and shape concern in females than males.<sup>23</sup>

The mean score difference of gelotophobia and stress among individuals who exercise and who do not exercise was analysed through independent t-test. The gelotophobia and stress mean score of individuals who do not exercise was slightly higher than those who exercise but the difference on both was not statistically significant. Gelotophobes have a fear of presenting themselves as ridiculous objects in front of their social partners.<sup>24</sup> This could probably be one of the reasons due to which they avoid exercising because they fear that they look absurd to others around them.

Concerning the relationship between gelotophobia and perceived stress, the current study found a significant positive correlation between the two variables. High level of gelotophobia is associated with greater perceived stress among obese individuals. Past studies have established association between weight status and stress among adolescents and revealed that obesity could lead to stress, depression and low self-esteem.<sup>25,26</sup> The finding of this study contributed to existing literature on stress and weight by showing a positive relationship between gelotophobia and perceived stress among a sample of overweight individuals.

The study has few limitations, which might have affected the results obtained. Firstly, study selected participants were from a single city, which limit the scope of generalization of its findings. Secondly, the study employed a cross-sectional research design, which provided a snapshot of the phenomenon. Longitudinal research can be more helpful in establishing the course of development of gelotophobia and stress among overweight and obese individuals.

## Conclusion

Present study highlighted common presence of moderate degree of gelotophobia in the present sample of obese individuals. It brings forward the prevalent teasing and ridicule often experienced by largely student sample of obese individuals, and further adding risk for increase on gelotophobia for these individuals. These findings provided a foundation for addressing pertinent concern of weight-

based stigmatization, informed the need for generating public awareness of its related hazards from clinical perspective, and identified an at-risk population of students where initiation of suitable interventions would prove most beneficial.

**Disclaimer:** None.

**Conflict of interest:** None.

**Funding Sources:** None.

## References

- Ruch W, Proyer RT. The fear of being laughed at: Individual and group differences in Gelotophobia. *HUMOR*. 2008; 21:47-67.
- Ruch W, Proyer RT. Who is gelotophobic? Assessment criteria for the fear of being laughed at. *Swiss J Psychol*. 2008; 67:19-27.
- Titze M. Gelotophobia: The fear of being laughed at. *HUMOR*. 2009; 22: 27-48.
- Ruch W, Hofmann J, Platt T, Proyer RT. The state-of-the art in gelotophobia research: a review and some theoretical extensions. *HUMOR*. 2014; 27:23-45.
- Ruch W, Harzer C, Proyer RT. Three by five: Three dispositions towards ridicule and being laughed at meet the Big Five. *Israeli J Humor Research*. 2013; 2:2-20.
- Platt T, Ruch W, Proyer RT. A lifetime of fear of being laughed at: An aged perspective. *Z Gerontol Geriatr*. 2010; 43:36-41.
- Haines J, McDonald J, O'Brien A, Sherry B, Bottino CJ, Schmidt ME, et al. Healthy habits, happy homes: randomized trial to improve household routines for obesity prevention among preschool-aged children. *JAMA Pediatr*. 2013; 167:1072-9.
- WHO Expert Consultation. Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *Lancet*. 2004; 363:157-63.
- Blodorn A, Major B, Hunger J, Miller C. Unpacking the psychological weight of weight stigma: A rejection-expectation pathway. *J Exp Soc Psychol*. 2016; 63:69-76.
- Puhl RM, Wall MM, Chen C, Austin SB, Eisenberg ME, Neumark-Sztainer D. Experiences of weight teasing in adolescence and weight-related outcomes in adulthood: a 15-year longitudinal study. *Prev Med*. 2017; 100:173-9.
- Khan AN, Khalid S, Khan HI, Jabeen M. Impact of today's media on university student's body image in Pakistan: A conservative, developing country's perspective. *BMC Public Health*. 2011; 11:379.
- Hair JF, Black WC, Babin BJ, Anderson RE. *Multivariate data analysis*. Maxwell Macmillan International Editions, 2010.
- Ruch W, Proyer RT. Who is gelotophobic? Assessment criteria for the fear of being laughed at. *Swiss J Psychol*. 2008; 67: 19-27.
- Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav*. 1983; 385-396
- Proyer RT, Ruch W, Ali NS, Al-Olimat HS, Amemiya T, Adal TA, et al. Breaking ground in cross-cultural research on the fear of being laughed at (gelotophobia): A multi-national study involving 73 countries. *Humor-International Journal of Humor Research*. 2009; 22:253-79.
- Cohen S, Kamarck T, Mermelstein R. A Global Measure of Perceived Stress. *J Health Soc Behav*. 1983; 24:385-96.
- Kohlmann CW, Eschenbeck H, Heim-Dreger U, Hock M, Platt T, Ruch W. Fear of being laughed at in children and adolescents: exploring the importance of overweight, underweight, and teasing. *Front Psychol*. 2018; 9:1447.
- Kamble SV, Proyer RT, Ruch W. Gelotophobia in India: The Assessment of the Fear of being Laughed at with the Kannada Version of the GELOPH- Psychological Studies. 2014; 59: 337-44.
- Kohlmann CW, Platt T, Ruch W. Overweight and the Experience of Teasing and Ridicule: Associations with the Fear of Being-laughed at in Children and Adolescents. *Front Psychol*. 2018; 9:1447.
- Platt T, Proyer RT, Ruch W. Gelotophobia and bullying: The assessment of the fear of being laughed at and its application among bullying victims. *Psychol Sci Q*. 2009; 51:135-47.
- Moya-Garofano A, Torres-Marin J, Carretero-Dios H. Beyond the big five: the fear of being laughed at as a predictor of body shame and appearance control beliefs. *Pers Individ Dif*. 2019; 138: 219-24.
- Radomska A, Tomczak J. Gelotophobia, self-presentation styles, and psychological gender. *Psychol Test Assess Model*. 2010; 52: 191-201.
- Hoffmann S, Warschburger P. Weight, shape, and muscularity concerns in male and female adolescents: Predictors of change and influences on eating concern. *Int J Eat Disord*. 2017; 50:139-47.
- Titze M. The Pinocchio complex: Overcoming the fear of laughter. *Hum Health J*. 1996; 5: 1-11.
- Coccia C, Darling CA, Cui MRM, Sathe SK. Adolescent Health, Stress and Life Satisfaction: The Paradox of Indulgent Parenting. *Stress Health*. 2012; 28:211-21.
- Tajik E, Nor Afiah MZ, Anisah B, Halimatus SM, Latiffah AL. Contributing factors of obesity among stressed adolescents. *Electron Physican*. 2014; 6:771-8.