

ORIGINAL ARTICLE

Obesity an Emerging Epidemic: Effects and Consequences of Loneliness and Perceived Parental NeglectRabia Zonash¹, Kehkashan Arouj²**ABSTRACT****Objective:** To explore the effect of loneliness and perceived neglect on obesity among university students.**Study Design:** Cross sectional research design.**Place and Duration of Study:** The study was conducted at Air University, Foundation University Rawalpindi Campus, International Islamic University, National Defence University, Riphah International University and National University of Modern Languages from August 2016 to May 2017.**Materials and Methods:** The study comprised of 200 respondents (males=102, females=98), selected through purposive sampling technique. Three self-reported assessments tools were used in present study namely De Jong Gierveld Loneliness Scale, Childhood Trauma Questionnaire, The Weight Self-Stigmatization Questionnaire to measure the variables of loneliness, perceived neglect and obesity among the student. To determine the reliability of measures, Cronbach's alpha co-efficient Pearson correlations, T-test, ANOVA analysis were used.**Results:** Results showed that emotional loneliness and social loneliness have a negative relation with obesity (e.g., self-devaluation and enacted stigma). Perceived parental neglect has a positive relation with obesity. Gender means differences indicated that female (49.0%) experience more loneliness and obesity whereas boys (51.0%) are higher on perceived parental neglect subscales. Age differences indicated that adolescents (16.5%) experienced more obesity than adult's students (83.5%).**Conclusion:** The higher level of loneliness feelings and perceived neglect by parents are significant predictors of obesity in university student.**Key Words:** BMI, Loneliness, Neglect, Obesity, Students, Trauma, Weight.**Introduction**

In this world, man is viewed as a social creature. It is an essential need of individuals to connect so they can't be left alone. Parental figures or guardians are initial ones with whom one associates, they either satisfy or dissatisfy the child need of association. Sometimes these dissatisfying relation and harsh relation with parents can foster emotional difficulties in children that often lead to dissatisfied body image.¹

Loneliness is an emotional component of social separation in which individual wants to be alone to avoid social confrontation.² It is unique in relation to

disengagement (being distant from everyone else). It is a subjective affair of the disparity between the individual's present actual and desired social relations that one wishes.² Loneliness can be knowledgeable about two different ways as social loneliness and emotional loneliness. Social loneliness is described by encountering the absence of social relations and emotional loneliness is linked to still feel lonely in presence of abundant of people including mistrust trust in others.³ There are several factors that link the feeling of loneliness and perceived loneliness with multiple factors like obesity, higher mortality rates, and smoking habits.⁴ Obesity is a rising epidemic in Pakistan which is still un-recognized in indigenous culture. Obesity and overweight are a global epidemic that is affecting about 1 billion in the general population, out of which 300 million are obese and 2.6 million die due to obesity and over-weight issues.⁵ Obesity is a medical condition that is caused by increased fat deposition in the body due to less physical activity and more caloric intake.⁸

According to World Health Organization (WHO) categorize the overweight and obesity on the basis of

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body mass index (BMI), and is recognized as one of the independent risk factors that is linked with other serious non-communicable diseases such as hypertension, cardiovascular diseases, type-II diabetes mellitus, osteoarthritis, obstructive sleep, and cancers.^{8,9} In 2008, according to global estimates 1.46 billion adults are overweight, 502 million are obese, and 170 million of the children are obese and overweight.^{10,11,12} Hence, obesity is a global phenomenon affecting a large number of individuals across the globe. According to the new survey, country wise obesity is highest in Papua New Guinea almost 79–80 percent population is obese, in Qatar 34–45 percent population is obese, Lebanon have 36–38 % population and the United States have 32–35 % of obese population.^{6,7,11}

A recent survey by National Health Survey of Pakistan (NHSP) in duration of (2004-05) in city of Karachi Reported that the prevalence of overweight population is 3% and 5.7% urban school-aged children also were found to be obese and overweight.¹³ In indigenous culture, obesity disease is changing pattern of expression that is affecting all age groups of Pakistan. Urban population especially females experience more obesity than rural males and females. Age is another factor girls of all ages experienced more obesity as compared to boys.¹⁰ Researchers have recognized that individuals who experience the negative effects of loneliness demonstrate expanded utilization of sugar or glucose-rich junk food and drinks which consequently influence body mass index (BMI).¹⁴ Another examination demonstrated that the individuals who are socially avoidant in nature display high basal glucose levels in their blood.¹⁵ In gentle to extremely large people it was seen that higher amount of food is consumed by females when encountering pessimistic feelings, for example, outrage, gloom, fatigue, and loneliness.¹⁶ Several factors play its role in the development of obesity in adults. Early past experiences develop habits to deal with life stresses in different manners either in the positive manner or negative.¹⁷ For that, child maltreatment incorporates both physical abuse and neglect which is most common while deliberate neglect is uncommon.^{18,19} Child neglect is very different from child physical, sexual or emotional abuse endured. Neglect is tenacious, non-physical

hurtful collaborations between a child and parental figure. Neglect is characterized as the sort of maltreatment in which guardian neglects to fulfill a child physical, emotional, educational or emotional needs.²⁰

A study from Denmark in educational sector found that childhood neglect anticipated obesity in youthful adulthood.³⁴ Further, numerous studies found the relationship between child maltreatment and obesity which demonstrated that the chances of obesity expanded in children who had encountered neglect in early long periods of life.²⁰ A longitudinal study on emotional wellbeing on 8471 individuals indicated that children who have encountered neglect in childhood have higher BMI development rates in adult age.^{21,22} A meta-examination of 41 studies including 190,285 participants revealed that childhood maltreatment was related to the higher risk factor for prolonging obesity over lifetime.²²

University students experience diverse psychological issues but the variables being explored in the present study have been understudied and most of the researches have been carried out in the westerns researches. Numbers of western, medical researches have done experimental researches with obese individuals but none of the indigenous researches have explored the link between different psychological variables with BMI and obesity among university students. There are a few kinds of research that have examined the relationship between loneliness and neglect; and the relationship of both with obesity. Regardless of the purpose of the study none of the indigenous researches have explored the effect of neglect and loneliness on obesity among university students. Loneliness and neglect have been studied with a number of independent variables e.g., psychiatric disorders, physical health, attachment styles, and personality disorders with sexual and physical abuse.^{23,24,25} Hence, for that the present study was aimed to explore the predictive effect of loneliness, neglect on obesity among university students.

Materials and Method

The cross-sectional research design was used in present study at Air University, Foundation University Rawalpindi Campus, International Islamic University, National Defence University, Riphah International University, National University of

Modern Languages from August 2016 to May 2017. After the approval of the ethical committee of Foundation University Rawalpindi Campus, the study was started. Purposive sampling technique was utilized in the present study to include students after receiving written informed consent. Initially, BMI scores of the students were obtained before they were included in the study sample; students having low BMI were excluded from the sample. Total of 280 students was taken after fulfilling the inclusion criterion only 200 were selected for the present study. Three standardized measures were used in the present study the first questionnaire utilized in the present study was The Gierveld Loneliness Scale was developed by Gierveld and Kamphuis in 1985. The scale consists of 11-item and it's a 5-point Likert scale. The overall Cronbach alpha coefficient range for emotional and social loneliness scale respectively was 0.81-0.73. The second scale used in the present study was The Childhood Trauma Questionnaire was developed by Bernstein and Fink in 1998. The scale comprised of 23 items and its 5 points Likert scale. Overall Cronbach alpha coefficient range for parental neglect was in the range of $\alpha = 0.83-0.91$. The third scale utilized in the present study was "The Weight Self-Stigmatization Questionnaire" is a 12 item scale (5-point Likert scale) containing two subscales namely self-stigmatization and fear of enacted stigmatization with overall Cronbach alpha coefficient range of (0.88-0.87).

After data collection, the data was analyzed using SPSS-21 version. Means standard deviation mean differences were calculated for demographic variables for numeric variables like gender, family structure, BMI, levels of education, and SES on study variables. The correlation matrix was calculated to explore the relationship between loneliness and perceived neglect and obesity among university students. The reliability of the table was determined by Cronbach Alpha reliability. The reliability estimate of $p \leq .05$ was considered significant.

Results

For purpose of present study a total of 200 students were selected out of which 102 were males (51.0%) and 98 were females (49.0%). 33 adolescents in the age range of 17-27 years (16.5%) were taken whereas, 167 adults in the age range of 28-40 years (83.5%) were selected. Only 4 students were in

category of (underweight) with BMI of 17.75 (2.0%), 39 students were in (healthy) category with BMI range from 17.76-23 (19.5%), 40 students were in (overweight category) in BMI range of 24-25 (20.0%), 117 students were (obese) with 25 BMI or above (58.5%). The result of the study indicated that most of the participants were obese and indicated the prevalence of obesity in our society in relatively high. Cronbach's alpha reliability was also determined for the present sample.

Table II indicates that emotional loneliness has negative whereas social loneliness has a positive relation with obesity. Overall emotional abuse, physical abuse, sexual abuse, emotional neglect, parental neglect has a positive relation with obesity (self-devaluation and fear of enacted stigma). Table III indicates gender differences on the study variables. The table showed that females mean scores were higher on emotional and social loneliness as compared to male students. Female means were higher on emotional abuse and emotional neglect. Male students were higher on physical, sexual abuse, and parental neglect as compare to female students. Females were also higher on obesity as compare to the male students. The gender means differences were also in accordance with previous researches which showed that parental neglect was higher in female as compared to male counterparts. Table IV indicated that students in the age range of 17- 27 years were higher on social loneliness as compared to students in the age range of 28- 40 years. Students in the age range of 17- 27 years were higher on emotional abuse, emotional neglect, and parental neglect; whereas, students in the age range of 28- 40 years were higher on physical abuse and sexual abuse. Students in the age range of 17- 27 years were higher on obesity as compared to students in the age range of 28- 40 years. Table V shows that emotional loneliness means was higher in underweight and obese students, whereas social loneliness was higher in underweight students. Physical and sexual abuse was significantly higher in overweight individuals. Emotional abuse, emotional neglect and parental neglect was higher in underweight students, physical abuse and sexual abuse mean was higher in overweight students. Obesity is highest in overweight and obese students above the BMI of

>27 or above. The result findings indicated that loneliness and parental neglect can lead to fluctuations of increasing or decreasing BMI in students.

Table I: Demographic Variables Frequency and Percentages (n=200)

| Variables | | Frequency | (% age) |
|---------------|-------------------------------|-----------|---------|
| Gender | Male | 102 | 51.0% |
| | Female | 98 | 49.0% |
| Age | 17-29 years | 33 | 16.5% |
| | 27-40 years | 167 | 83.5% |
| BMI | Less than 17.75 (underweight) | 4 | 2.0% |
| | 17.76-23 (healthy) | 39 | 19.5% |
| | 24-25 (overweight) | 40 | 20.0% |
| | 25 or above (obese) | 117 | 58.5% |

Table II: Correlation Between Loneliness, Neglect, and Obesity (n= 200)

| | 11 | 2 | E3 | 4 | 5 | 6 | 7 | 8 | 9 | . |
|--------------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| 1.Emotional Loneliness | -- | .22** | .28** | .23** | .20** | .22** | -.17* | -.17* | -.030 | .80 |
| 2.Social Loneliness | | -- | .13 | .18* | .23** | .27** | .15* | .06 | .10 | .67 |
| 3.Emotional Abuse | | | -- | .44** | .24** | .15* | .06 | .28** | .20** | .77 |
| 4.Physical Abuse | | | | -- | .27** | .20** | .17* | .04 | .18* | .63 |
| 5.Sexual Abuse | | | | | -- | .15* | .15* | .07 | .108 | .50 |
| 6.Emotional Neglect | | | | | | -- | .50** | .01 | -.021 | .83 |
| 7.Parental Neglect | | | | | | | -- | -.06 | .13 | .56 |
| 8.Self-Devaluation | | | | | | | | -- | .26** | .38 |
| 9.Fear of Enacted Stigma | | | | | | | | | -- | .75 |

*p <0.05, **p <0.01

Table III: Mean, Standard Deviation, t Value of Gender on Loneliness, Neglect, and Obesity (N= 200)

| Variables | Male (n=102) | | Female (n=98) | | t | p | 95% CI | |
|------------------------|--------------|------|---------------|------|-------|------|--------|------|
| | M | SD | M | SD | | | LL | UL |
| Emotional Loneliness | 117.95 | 5.45 | 19.67 | 5.60 | -2.15 | ..94 | -3.31 | -.14 |
| Social Loneliness | 111.17 | 4.09 | 12.34 | 3.83 | -2.04 | ..44 | -2.31 | -.03 |
| Emotional Abuse | 8.91 | 3.95 | 9.12 | 4.43 | -0.36 | ..20 | -1.4 | .97 |
| Physical Abuse | 8.43 | 5.01 | 7.44 | 3.70 | 1.55 | ..08 | -0.27 | .24 |
| Sexual Abuse | 8.10 | 6.84 | 7.33 | 3.51 | 0.98 | ..16 | -0.78 | .33 |
| Emotional Neglect | 3.23 | 5.92 | 14.16 | 6.01 | -1.05 | ..43 | -2.67 | .81 |
| Parental Neglect | 8.42 | 3.78 | 7.50 | 3.15 | 1.83 | ..03 | -0.06 | .89 |
| Self-Devaluation | 14.37 | 6.09 | 15.58 | 7.49 | -1.22 | ..28 | -3.17 | .74 |
| Fear of Enacted Stigma | 12.6 | 4.65 | 13.00 | 4.44 | -0.61 | ..26 | -1.67 | .88 |

Table IV: Mean, Standard Deviation, t value of age on Loneliness, Neglect, and Obesity (N= 200)

| Variables | 17- 27 years (n=33) | | 28-40 years (n= 167) | | t | p | 95%CI | |
|------------------------|---------------------|-------|----------------------|------|-------|------|-------|------|
| | M | SD | M | SD | | | LL | UL |
| Emotional Loneliness | 18.97 | .60 | 18.77 | 5.59 | 0.18 | 0.81 | -1.92 | 2.31 |
| Social Loneliness | 12.07 | .27 | 11.69 | 3.96 | 0.48 | 0.42 | -1.19 | 1.95 |
| Emotional Abuse | 9.94 | .96 | 8.83 | .40 | 1.37 | 0.03 | -0.48 | 2.70 |
| Physical Abuse | 6.78 | 3.12 | 8.18 | 4.63 | -1.64 | 0.02 | -3.09 | .28 |
| Sexual Abuse | 6.55 | 2.86 | 7.94 | 5.8 | -1.31 | 0.1 | -3.5 | .71 |
| Emotional Neglect | 15.6 | 5.37 | 13.34 | 6.02 | 1.82 | 0.45 | -0.18 | 4.69 |
| Parental Neglect | 8.03 | 3.24 | 7.95 | 3.56 | 0.11 | 0.15 | -1.25 | 1.39 |
| Self-Devaluation | 16.06 | 11.27 | 14.76 | 5.57 | 0.97 | 0.09 | -1.32 | 3.92 |
| Fear Of Enacted Stigma | 13.00 | 5.12 | 12.76 | 4.43 | 0.16 | 0.72 | -1.57 | 1.85 |

Table V: Mean, Standard Deviation, t value of BMI on Loneliness, Neglect, and Obesity (N= 200)

| Variables | BMI | N | M | SD | F (df) | p | . |
|------------------------|-------------|-----|-------|-------|----------|------|-----|
| Emotional Loneliness | Underweight | 4 | 19.00 | 1.41 | 2.153 | .1 | .21 |
| | Healthy | 36 | 17.47 | 4.80 | [3, 186] | | |
| | Overweight | 38 | 17.60 | 5.24 | | | |
| | Obese | 112 | 19.64 | 5.89 | | | |
| Social Loneliness | Underweight | 4 | 14.75 | 3.3 | 5.350 | .001 | .12 |
| | Healthy | 37 | 12.75 | 2.9 | [3, 186] | | |
| | Overweight | 39 | 13.10 | 4.75 | | | |
| | Obese | 110 | 10.81 | 3.82 | | | |
| Emotional Abuse | Underweight | 4 | 12.50 | 3.31 | 1.062 | .37 | .10 |
| | Healthy | 38 | 8.95 | 3.81 | [3, 190] | | |
| | Overweight | 40 | 9.27 | 4.89 | | | |
| | Obese | 112 | 8.82 | 4.04 | | | |
| Physical Abuse | Underweight | 4 | 7.50 | 3.78 | 1.798 | .15 | .11 |
| | Healthy | 38 | 7.84 | 3.09 | [3, 189] | | |
| | Overweight | 38 | 9.42 | 5.22 | | | |
| | Obese | 113 | 7.51 | 4.5 | | | |
| Sexual Abuse | Underweight | 4 | 6.25 | 2.5 | 1.677 | .17 | .06 |
| | Healthy | 36 | 7.83 | 4.34 | [3, 187] | | |
| | Overweight | 40 | 9.32 | 9.54 | | | |
| | Obese | 111 | 7.15 | 3.38 | | | |
| Emotional Neglect | Underweight | 4 | 16.50 | 6.60 | 2.000 | .116 | .11 |
| | Healthy | 38 | 14.31 | 5.47 | [3, 180] | | |
| | Overweight | 40 | 15.07 | 6.05 | | | |
| | Obese | 102 | 12.76 | 6 | | | |
| Parental Neglect | Underweight | 4 | 8.25 | 3.30 | .362 | .781 | .08 |
| | Healthy | 38 | 8.47 | 3.55 | [3, 193] | | |
| | Overweight | 38 | 7.71 | 3.59 | | | |
| | Obese | 117 | 7.88 | 3.49 | | | |
| Self-devaluation | Underweight | 4 | 13.50 | 1.29 | .262 | .853 | .12 |
| | Healthy | 37 | 15.54 | 10.39 | [3,186] | | |
| | Overweight | 37 | 14.32 | 8.29 | | | |
| | Obese | 112 | 15.07 | 4.69 | | | |
| Fear of Enacted Stigma | Underweight | 4 | 12 | 1.63 | .775 | .510 | .06 |
| | Healthy | 39 | 12.38 | 3.70 | [3,193] | | |
| | Overweight | 39 | 12.07 | 4.47 | | | |
| | Obese | 115 | 13.2 | 4.86 | | | |

Discussion

The aim of the study was to see the relationship between loneliness (e.g., emotional and social loneliness), parental neglect (e.g., emotional abuse, physical abuse, sexual abuse, emotional neglect, parental neglect), and obesity (e.g., self-devaluation and fear of enacted stigma) among university students. The study also aimed to explore the effect of different social factors e.g., gender, age, and BMI on loneliness, neglect and obesity among university students. The result indicates that feeling of loneliness tend to increase/ add up obesity. Similarly parental neglect is another variable that increased obesity issues among students. Previous researches have indicated that neglectful families have children that have more probability of being lonely or inaccessible. Chronic loneliness is significantly related to neglect.²⁶ Emotional loneliness in past writing has a significant negative correlation with childhood abuse and neglect, the fundamental rationale behind neglect is that the families neglect to satisfy the emotional needs of their kids when neglected these youngsters tend to concentrate more on subjective based cognitive biases.²⁷ At the point, when youngsters learn set examples or limits/governs for good exercises then social outcomes are normal. Specialists have demonstrated that such kids show great execution in school and professions while having clear standards for working for^{28,29} such families monetarily advantage from neglecting young children that positively influence the existence working performance. Emotional abuse has a significant positive correlation ($r= 0.281^{**}$) with self-downgrading. Past research has featured that childhood abuse is found to foresee low confidence, more mistreatment, melancholy and sadness in grown-ups.³⁰

Gender differences in the present study showed that females significantly suffer more emotional and social loneliness, emotional neglect and obesity (e.g., self-devaluation and fear of enacted stigma). Thus, it proves our hypothesis that loneliness and neglect are suffered more by women. Though, physical abuse and parental neglect are endured more by males when contrasted with females. Results portraying that physical abuse is experienced more by men is as per another study demonstrating

the same outcomes. A UK-based study reports that females are more helpless against physical abuse and emotional abuse as young men are less inclined to get great supervision which is inverse to the findings of the present study.³⁰ Cross-sectional literature has suggested UK, Afro-Caribbean, and Pakistani girls were at high risk of developing obesity. Obesity was also considered with other variables of height and weight.³⁰ Result of the study also showed that students with more BMI are also higher on loneliness, neglect and obesity. Mean of BMI was higher in Afro-Caribbean girls and boys, whereas, Indian, Bangladeshi, and Chinese boys and girls had low BMI, in comparison of overall general population BMI.^{31,32} Age differences indicated that students in age range of 17- 27 years were higher on social loneliness as compared to students in age range of 28- 40 years. Students in an age range of 17- 27 years mean were higher on emotional abuse, emotional neglect, parental neglect, whereas; students in the age range of 28- 40 years were higher on physical abuse and sexual abuse. Students in the age range of 17- 27 years mean were higher on obesity as compared to students in an age range of 28- 40 years. Previous researches have indicated that loneliness is a higher in adolescents than adults which are consistent with the researches that most elevated amounts of loneliness are experienced under age 25 years and over age 65 years.³³ Emotional loneliness is significantly higher in both underweight and obese individuals, physical and sexual abuse is significantly higher in overweight individuals. Obesity e.g., self-devaluation and fear of enacted stigma are more in obese as compared to others. Researches have indicated that lower socioeconomic status is the predictor of higher emotional neglect and higher loneliness among student that lead to higher obesity. Multiple types of research have also indicated similar research findings, as being neglected and feeling lonely are risk factors for increasing obesity and overweight among students.^{30,32,33} The results of the study have supported the previous literature findings. The present study is cross-sectional study that assessed study variables through self-report measures for that the comprehensive information source of abuse are unknown for that qualitative research with interview technique in future research would help to highlight the sources and forms of

abuse with severity of loneliness. As neglect is sensitive issue, it's important in future researches to distinguish between abuse and neglect and their resulting consequences for future using longitudinal research method would enable to highlight the consequences and associated variables causes linked with study variables. The study focused only on relationship between study variables in future it would be appropriate to use higher analysis such as multinomial logistic and hierarchal regression to determine the cause and effect and direction of relationship that exists between study variables. The study only explore the effect of different demographics variable effect it is recommended that future researches should device and suggest interventions specifically for neglect as neglect is a strong variable that is major factor behind impairing personal functioning.

Conclusion

The study aimed to explore the relation between loneliness, neglect and obesity. The study has concluded that loneliness and parental neglect tend to increase obesity. The study findings suggested that decreasing feeling of loneliness and working on parental neglect can help to minimize risk of obesity among the students. There are many factors that affect to help in minimizing feeling of loneliness when social factors are supportive and when parent provide protective environment to offspring it can help to foster feeling of better healthy habits among the participant.

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