

Research Paper

## Understanding the Relationship between Self Esteem, Loneliness and Emotional Eating Among Young University Students

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### ABSTRACT

The aim of this investigation was to understand the relationship between self esteem, loneliness and emotional eating among young university students. Self-esteem, loneliness, and emotional eating are three interconnected aspects of human psychology that have a significant impact on people's well-being and actions. Self-esteem is the subjective assessment of one's worth and talents, which influences how people view themselves and interact with the world around them. It influences attitudes, actions, and general mental health. Loneliness, on the other hand, is a negative emotional state caused by perceived social isolation or a lack of meaningful connections with others. It can have a substantial influence on both mental and physical health, increasing the risk of stress, depression, and other psychological problems. Emotional eating is frequently used as a coping method in reaction to unpleasant feelings like loneliness or poor self-esteem. Individuals may resort to food for consolation or diversion when experiencing emotional turmoil. However, this eating pattern can lead to unhealthy interactions with food and increase feelings of poor self-esteem. Understanding the relationship between self-esteem, loneliness, and emotional eating is critical for designing successful treatments that enhance psychological well-being and good coping skills.

**Keywords:** *Self Esteem, Loneliness, Emotional Eating, Young University Students*

In this investigation a sample of 110 university students were selected, within the age limit of 18 to 24 years. The tools employed were The Rosenberg self-esteem scale (Rosenberg, 1965), The UCLA Loneliness scale (Carver, 1978), and The Emotional Eater Questionnaire (Garaulet, 2004), the participants were also required to submit their height and weight for a body mass index (BMI) range. Mean, Standard deviation, t-test, one way ANOVA and Pearson's coefficient of correlation were the statistical techniques used for analyzing the data thus obtained. The findings of the present study revealed that females had lower levels of self-esteem than males and who in turn showed higher levels of Loneliness. Emotional eating was found to be higher in males than females but the results were found non- significant.

There is significant difference between males and females when it comes to Self-esteem and Loneliness.

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Received: August 23, 2024; Revision Received: September 27, 2024; Accepted: September 30, 2024

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### METHODOLOGY

#### *Sample:*

A sample of 110 university students from Chandigarh participated. 60 Females and 50 Males with age ranges from 18 to 24 (mean age, males=21.82, females=20.71, SD= males= 2.077, females = 1.807)

*Table 1 Description of the Sample-*

Characteristics	
N	110
Age	Mean = (Males= 21.82, Females= 20.71) SD = (Males= 2.077, Females= 1.807)
Residence	100% Urban
Gender	Males= 45.45%, Females= 54.54%

#### *Tools used:*

The following scales were used to study the variables:

- 1. The Rosenberg Self esteem Scale (Rosenberg, 1965)-** A variety of methods can be used to assess self-esteem, but the Rosenberg Self- Esteem scale (RSES) is one of the most popular in the mental health field. Rosenberg developed the RSES in 1965. Ten statements—five positive and five negative—are listed in the RSES. Typically, each statement has four response options, ranging from "strongly disagree" to "strongly agree." There are multiple versions of the RSES and it is public domain, so it can be modified for certain purposes. The RSES is widely used by psychological researchers because it is simple, quick, and easy to apply.
- 2. The UCLA Scale for Loneliness (Cacioppo, et.al., 1978)-** The UCLA loneliness scale is a widely used self report questionnaire developed to measure feelings of loneliness and social isolation in adults. It was developed by Cacioppo, Hawkley, and Willis in the 1980s at the University of Chicago. The scale consists of 20 items that assess three dimensions of loneliness: emotional loneliness, social loneliness, and existential loneliness. Each item is rated on a 4 -point likert scale (ranging from 1, "never", to 4, "often") and the total score can range from 20 to 80, with higher scores indicating greater feelings of loneliness. The scale has been found to have good reliability and validity in a variety of populations, and it has been used in a wide range of research studies on loneliness, social connections, and mental and physical health. It is often used in both basic and applied research to examine factors associated with loneliness such as health, ageing, and social relationships. It is a self report measure.
- 3. The Emotional Eater Questionnaire (Garaulet, 2004)-** Emotional eating, despite its paradoxical nature, is widespread among many people; those who suffer from emotional eating disorders may not always recognize it as such and thus do not seek treatment. The EEQ is an emotional eating scale that may be easily applied in healthcare practice. The EEQ defines obese people based on the link between food intake and emotions. It comprises ten elements that assess the extent to which they influence eating habits. Each question has four possible answers: (1) Never; (2) Sometimes; (3) Usually; and (4) Always. Each answer is given a value ranging from 0 to 3, with lower scores indicating healthier conduct. For clinical practice, participants are divided into four groups based on their score. A score of 0 -5 indicates non-emotional eater; a score of 6-10 indicates somewhat emotional eater; a

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score of 11-20 indicates emotional eater and a score of 21-30 indicates highly emotional eater.

### *Procedure:*

The data collection was done online by encompassing the scales into a Google form which was circulated. The instructions for each of the scales and the research in general were all added to the form. A consent form was also added in the Google form to record the consent of the participants. The participants were also asked to provide their height and weight in demographic information and BMI of the participants was calculated accordingly.

Ethical consideration:

The participants were asked for their informed consent. They asked to agree to a consent form in which they were assured that the information that they provided during their participation in this study would be kept confidential and the information would not be shared anywhere. They were also informed that they are free to withdraw from the study whenever they please without providing a reason and that their participation in the study was completely voluntary. The participants were not required to give out any personal revealing or identifying information like names, contact information etc.

All the participants were treated with dignity and respect and were not asked any personal questions that they were not comfortable with answering. The ethical guidelines of the American psychologists association (APA) were followed. The current study has future implications to help study self esteem, loneliness and emotional eating together in Indian youth.

### *Statistical analysis:*

Mean and standard deviations we calculated for all the domains. The difference between the two groups, i.e. Males and Females were assessed with the t-test. Correlation was used to see the significance of results in the two groups among the three scales and BMI results as well. In addition, one way ANOVA was also used to see the comparison of means to determine a significant difference among the three scales and BMI results. SPSS (version 21) software was used for the statistical analysis. The sampling technique used was a convenient sampling technique.

### *Objectives:*

1. To understand the association between self esteem, loneliness and emotional eating among young university students in India.
2. To identify the gender differences in Loneliness, Emotional eating and Self esteem among university students.
3. To examine significance difference of means of different BMI groups for self esteem, loneliness and emotional eating.

### *Hypothesis:*

- **H1.** There would be a negative correlation among the feelings of loneliness and low levels of self esteem among the studied sample.
- **H2.** There would be significant gender differences among the two groups for self esteem and loneliness and emotional eating.
- **H3.** The BMI range would act as an indicator affecting the relationship between self esteem, loneliness and emotional eating.

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### RESULTS

The statistical analysis was conducted to explore the relationship between self esteem, loneliness and emotional eating. To examine the association between the three variables closely Pearson correlation coefficient was computed. (Table 2)

The correlation between Self esteem and loneliness was found to be significant ( $r = -.541^{**}$ ). The correlation between self esteem and BMI was also found to be significant ( $r = -.233^*$ ). All other correlations are not statistically significant at 0.05 level.

**Table 2: Shows the Pearson correlation coefficient computed for self esteem, loneliness and emotional eating-**

		se	lone	emot.eat	BMI
Rosenberg Self esteem	Pearson Correlation	1	-.541**	-.063	-.233*
UCLA scale for Loneliness	Pearson Correlation		1	.179	.034
Emotional eater questionnaire	Pearson Correlation			1	.047
BMI	Pearson Correlation				1

\*\* correlation is significant at 0.01 level      \*correlation is significant at 0.05 level

Table 2 shows the Pearson correlation among self esteem, loneliness and emotional eating. As seen in the table self esteem and loneliness have a significantly negative correlation. Meaning that the two have a negatively inverse relationship wherein when one decreases the other increases, i.e. when an individual's self esteem levels are low the feelings of loneliness increases and vice-versa. In this table it can also be seen that BMI and self esteem also have a significant negative correlation meaning that when an individual's BMI also plays significant role in their self esteem levels impacting them negatively, stating that a higher BMI leads to a lower self esteem and vice-versa. The Pearson correlation for the emotional eater questionnaire (2004) was found to be non-significant meaning that the studied sample did not show an inverse relationship of emotional eating behaviour with neither self esteem nor loneliness.

T-test was done on all the variables to see the significance between the means of the two groups (Males, Females)

In the given data (Table 3) there are 60 Females and 50 Males. The means were significantly different for self esteem (Figure 1), the mean for Loneliness was significantly different (Figure 2), the means for Emotional eating was also not significantly different (Figure 3)

**Table 3: shows the T-test score, degree of freedom and significance (p values) of the variables.**

SCALES	t values	df	SIGNIFICANCE (p value)
Rosenberg Self Esteem Scale	-4.209	108	.000**
UCLA Scale for Loneliness	2.157	108	.033*
Emotional Eater Questionnaire	-1.808	108	.073

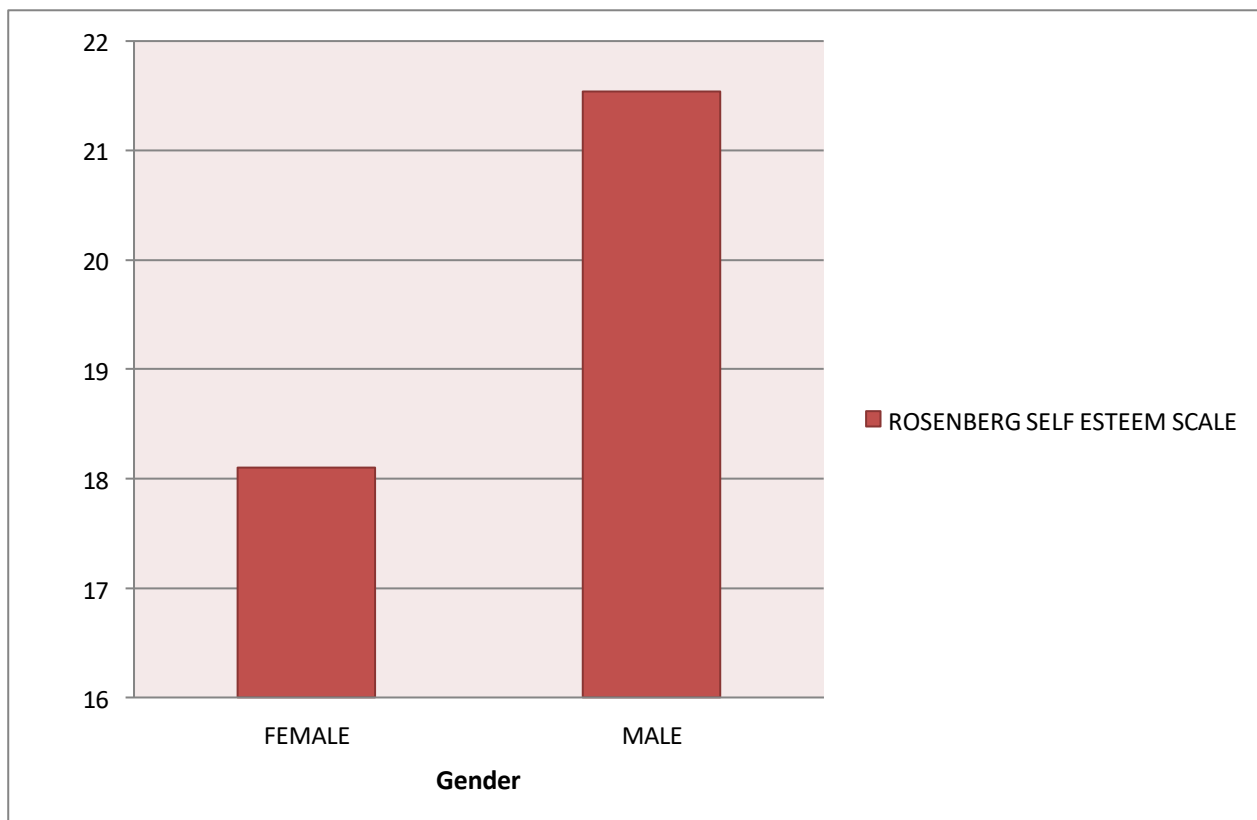
\*\* t value significant at 0.01 level      \* t value significant at 0.05 level

Table 3 shows the t-score values, degree of freedom and the significance (p-value) of self esteem, loneliness and emotional eating. A t-test is done to see if there is significant difference between the means of two groups and how they are related. In this study the two

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groups were the two gender groups, females and males (females=60, males=50). In this analysis it was observed that on the self esteem scale the t-values of the groups were found to be significant meaning that there was seen a significant difference in self esteem levels for the groups. It was seen that females experienced a lower level of self esteem than men. In the table it was also observed that there was a significant difference between the two groups on the loneliness scale. This indicated that due to the correlated relationship of the two variables women showed higher levels in feeling lonely. The t-values for the emotional eater questionnaire (2004) were found to be non- significant, indicating that the studied sample did not engage in harmful emotional eating behaviour.

**Figure 1 shows the mean difference between the two groups for Rosenberg self esteem scale\*\*-**

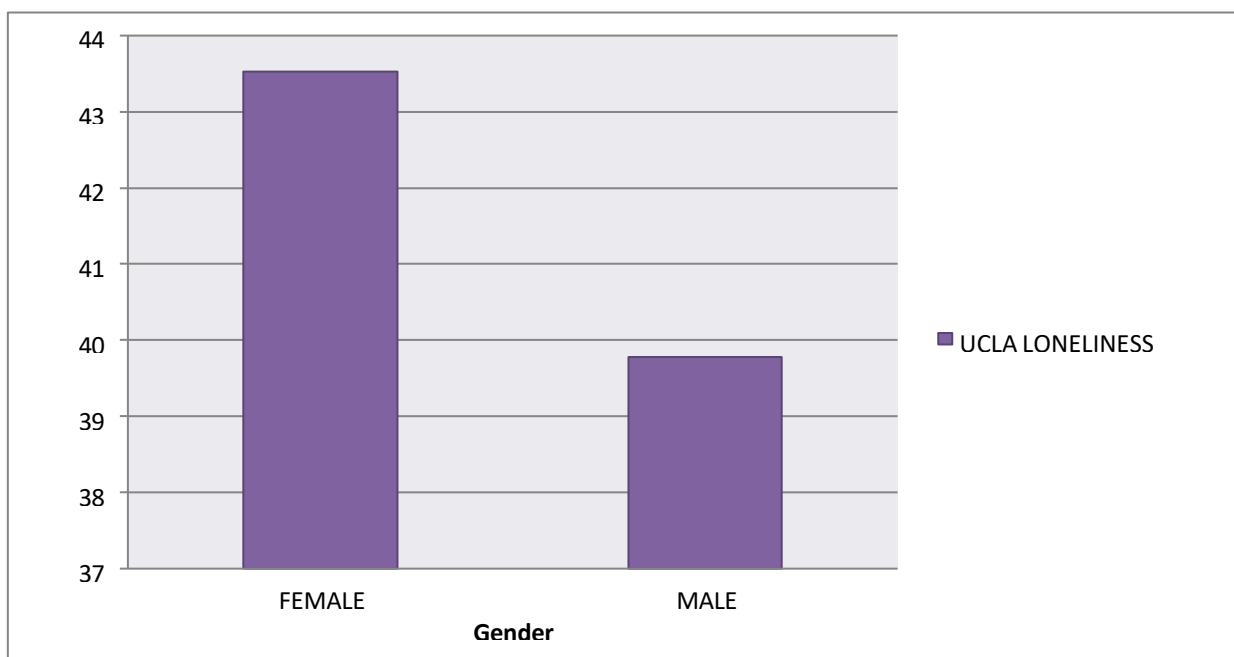


**\*\* Means are significant at 0.01 level.**

Figure 1 shows the graphical representation of the mean difference between the two groups for the Rosenberg self esteem scale (1965). In this figure it can be seen that there is a significant gender difference between females and males in reference to levels of self esteem. It can be seen that the mean value for males (21.54) is much higher than females (18.10) indicating that females have a lower level of self esteem than males.

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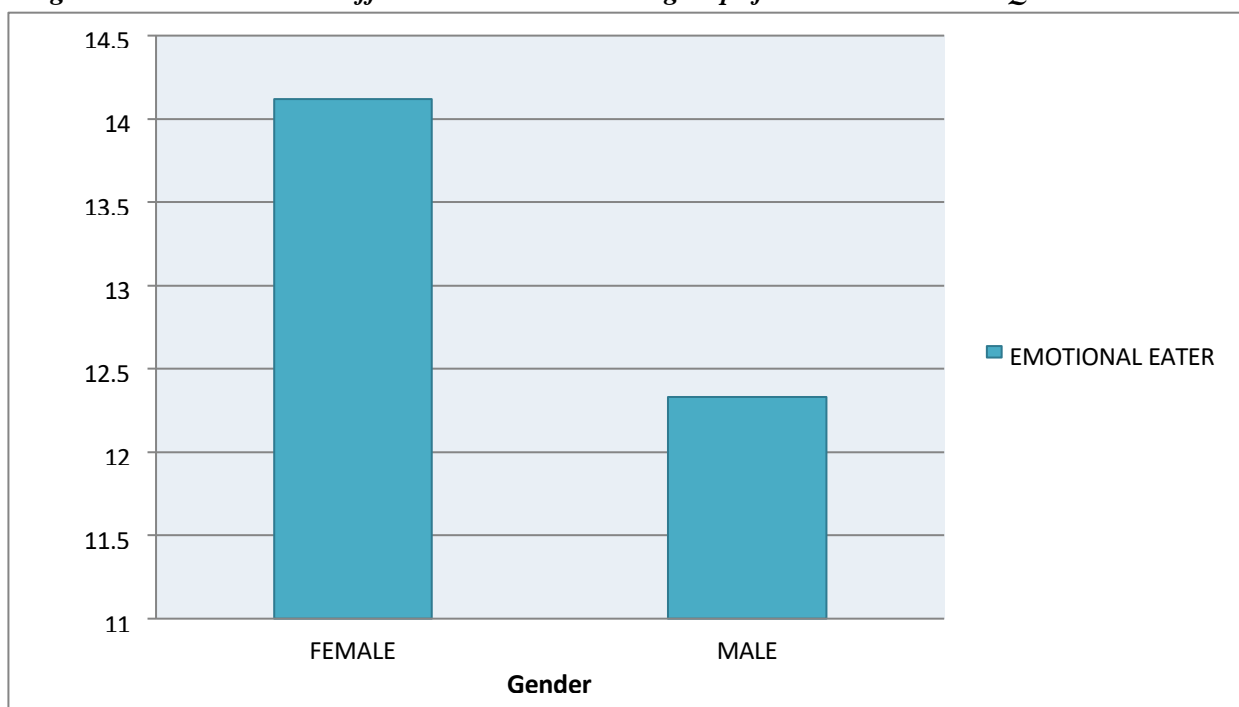
Figure 2 shows the mean difference between the two groups for UCLA scale for loneliness\*-



\*Means are significant at 0.05 level.

Figure 2 shows the graphical representation of the mean difference between the two groups for the UCLA scale for loneliness (1978). In this figure it can be seen that there is a significant difference between the two groups with regard to feelings of loneliness. It is seen that the mean value for females (43.53) is much higher than that in males (39.78) and, due to the fact that self esteem and loneliness have a negatively inverse relationship it was recorded that females had a higher rate of feeling lonely and experiencing loneliness.

Figure 3 shows the mean difference between the two groups for Emotional Eater Questionnaire -



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Figure 3 shows the graphical representation of the mean difference between the two groups for the emotional eater questionnaire (2004). In this figure it can be seen that there is a noticeable difference between the two groups with regard to emotional eating behaviour. It is seen that the mean value for females (14.12) is higher than that in males (12.33) and, even though these values are not significant there can be seen a slight difference denoting that females had a higher rate of emotional eating behaviour than males.

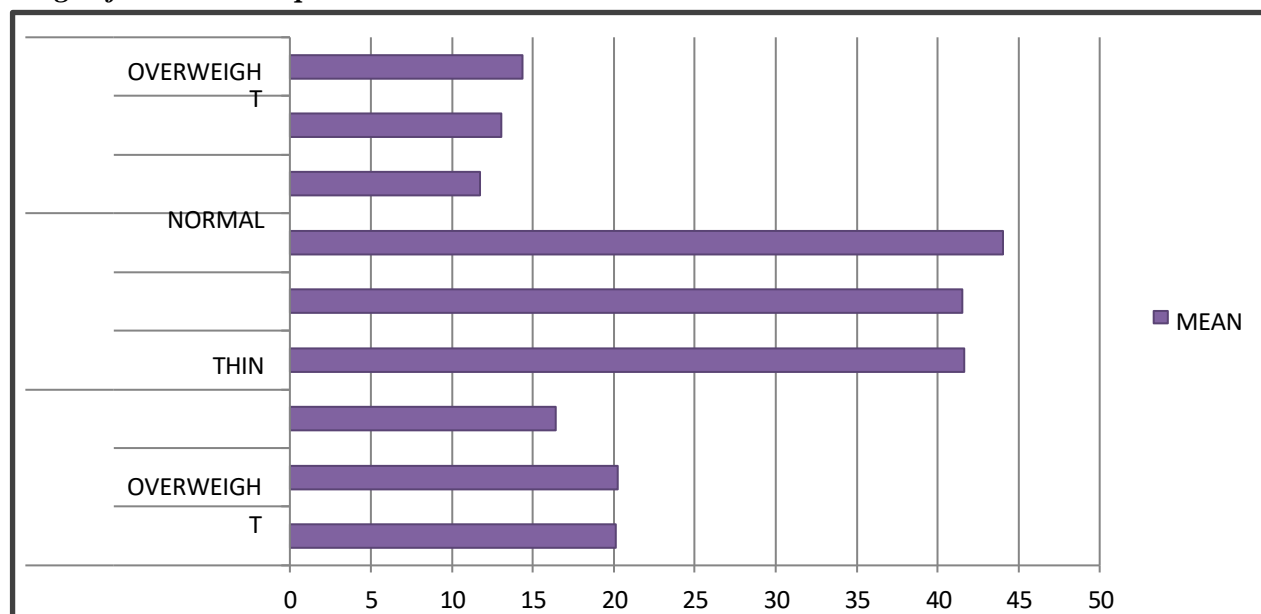
The sample mean of each variable was divided into the BMI (Body Mass Index) range given according to WHO to better understand the Body Mass (Height and Weight) –

**Table 4: Shows the division of the studied sample into the BMI range-**

SCALES	RANGE	N (no. of subjects)	MEAN
Rosenberg Self Esteem Scale	Thin	8	20.13
	Normal	82	20.24
	Overweight	20	16.42
UCLA Scale for Loneliness	Thin	8	41.63
	Normal	82	41.52
	Overweight	20	44.05
Emotional Eater Questionnaire	Thin	8	11.75
	Normal	82	13.04
	Overweight	20	14.37

Table 4 shows the studied sample divided into the BMI range provided by the world health organization (WHO). The studies sample showed that on the Rosenberg self esteem scale (1965), the UCLA scale for loneliness (1978) and the emotional eater questionnaire (2004), the studied population had the majority of individuals in the normal range. This indicated that physiologically all the participants were of average height and weight for both males and females.

**Figure 4 shows a graphical representation of the difference between the mean of the BMI range of the total sample-**



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Figure 4 shows the graphical representation of the difference between the mean for the BMI range of the studied sample. In this graph it can be seen that according to the BMI range (WHO), the sample had the highest difference of mean was seen in the scale for loneliness and self esteem, meaning that the people who fell in the overweight category were more likely to feel lonely and have a low self esteem.

One way ANOVA was applied on the independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different. In the given data (Table 3) there are differences between the two groups (60 females, 50 males) were calculated. The means within the group (18.44, 84.472, 27.442) and between the group (114.053, 49.822, 22.438) were not found to be significant.

**Table 5: Shows the means of the two independent groups both within and between-**

Groups (Females, Males)	Between Groups	Within Groups
Rosenberg Self Esteem Scale	114.053	18.44
UCLA Scale for Loneliness	49.822	84.472
Emotional Eater Questionnaire	22.438	27.442

Table 5 showed the means of the two independent groups both within and between. The analysis of one way ANOVA for the studied sample showed that although there was no significant difference between the means for the two groups, it did show that the highest difference between the two groups was in the Rosenberg self esteem scale (1965) and the highest difference within the two groups was in the UCLA scale for loneliness.

**Figure 5 shows the graphical representation of the group means of One way ANOVA**

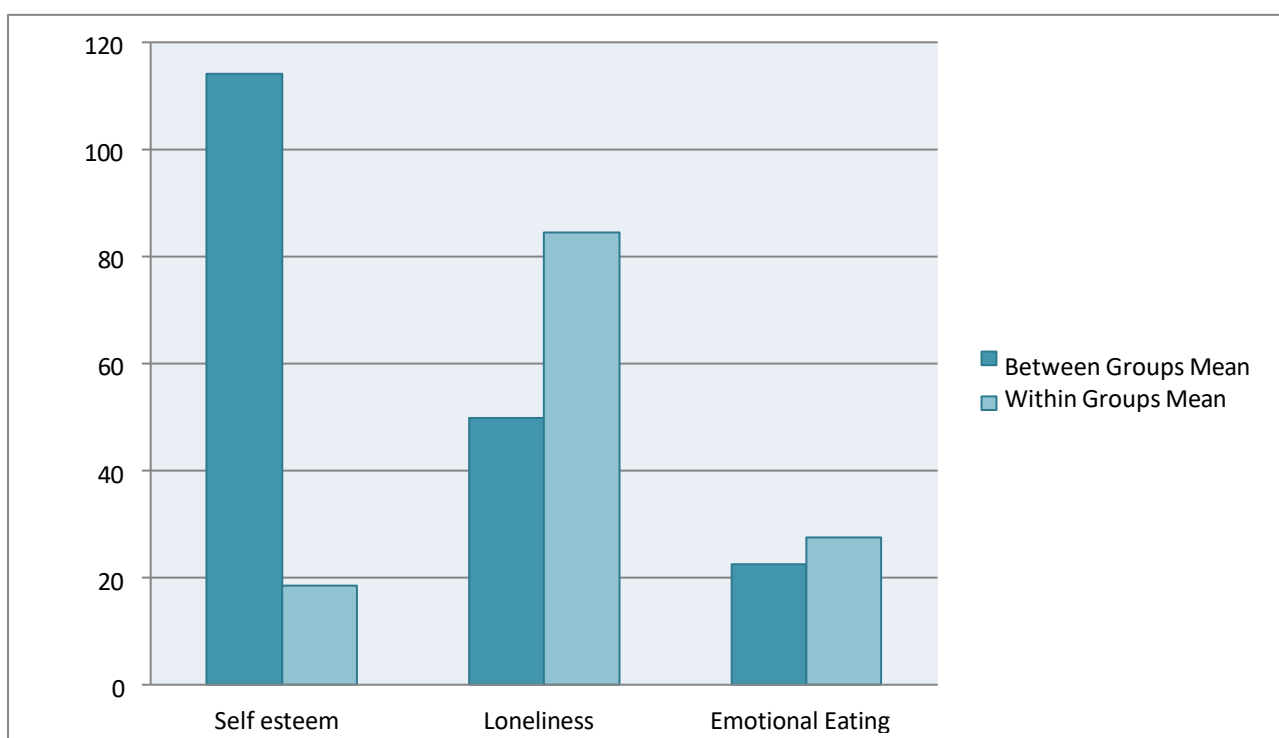


Figure 5 shows the graphical of the group means of One way ANOVA. In this graph the difference for within group means and between groups means are shown. Through this



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figure we can understand that there is a major difference between the two means for self esteem meaning that among the two groups there is a higher difference of means that within. It is also observed that there is a higher difference of means within the groups than between for loneliness. Lastly, it can be seen that for emotional eating the mean difference is higher within the groups than between.

### DISCUSSION

The aim of the study was to understand the relationship between self esteem, loneliness and emotional eating among young university students in India. A sample of 110 students was taken, with 60 Females and 50 Males. The age range was between 18 to 24 years. The data was collected using Google forms, the Google form encompassed all the three questionnaires for all three variables (self esteem, loneliness and emotional eating). The forms were designed to be easy to understand and easy to answer. A brief introduction was given of the survey and the subjects were assured of the confidentiality of their answers. The participants were first asked their demographics (age, gender, etc) and were also asked their height (approximately) and weight (approximately) to help calculate their body mass index (BMI). The Google form was distributed online through Whatsapp, Instagram and email to reach the target sample.

This study was conducted to understand the relationship between self esteem, loneliness and emotional eating among young university students. Three scales were applied to test the variables in the studies sample (N= 110, 60- females and 50- males). This study was aimed to find out whether there was a negative correlation between low self esteem and loneliness, and whether there was a negative correlation between emotional eating and high levels of loneliness. This study also aimed to find whether there was a significant difference for the variables among the two gender groups.

The statistical analysis was conducted to explore the relationship between self esteem, loneliness and emotional eating. To examine the association between the three variables closely Pearson correlation coefficient was computed. Several significant correlations were observed. This aligned with the previously reviewed literature (Ishaq, et.al 2017), suggesting a negative correlation between self esteem and loneliness.

According to a study conducted by Ishaq , et.al. (2017)- The study sought to investigate the association between self-esteem and loneliness among University Hostel Living students. The hypothesis was that there would be a negative relationship between self-esteem and loneliness. The sample for this study consisted of (N= 400) university students ranging in age from 18 to 24 years old and living in hostels. The sample was taken from several universities in Punjab, Pakistan, and comprised of about equal numbers of male (n = 198) and female (n = 202) students. Data was gathered using a survey approach. Rosenberg's Self-esteems Scale (Rosenberg, 1965) was used to assess self-esteem, while the University of California and Los Angeles loneliness scale was used to assess loneliness. Pearson bivariate correlation showed that there was significant negative correlation ( $r = -.57^*$   $p < .001$ ) between self-esteem and loneliness.

The correlation results also showed a significant negative correlation between BMI and self esteem. This is consistent with the previously studied literature, (Youssef, et.al. 2023). The correlation for other variables was not found significant. The lack of significant correlations

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in this study may be due to the relatively small sample size or the specific characteristics of the sample population.

According to a study by Youssef, et.al. (2023)- The study's goal was to research the prevalence of obesity among medical students at Al-Rayan Colleges, as well as its influence on self-esteem and academic performance, and to establish whether these findings differed by gender. Data were gathered via a questionnaire sent to all medical students at Al- Rayan Colleges, which included questions on body mass index (BMI), academic achievement, and self-esteem using the Rosenberg self-esteem scale (1965). The study included 250 medical students (104 males and 146 females), with a 72.9% response rate. The findings revealed that the prevalence of overweight and obesity was 23.1%, 16.3% in men and 24.7%, 11.6% in females. Female obesity has a substantial negative connection with self-esteem ( $r = -0.219$ ,  $p = 0.014$ ). There was no link discovered between obesity and academic achievement. BMI was found to predict self-esteem, particularly in females.

The t-test results comparing the two gender groups, males and females showed significant results, with the difference between males and females for self esteem being highly significant with males showing higher levels of self esteem than women, consistent with previous literature (Kling, 1999).

According to a study by Kling, et.al. (1999)-Two studies were carried out to investigate gender differences in global self-esteem. In Analysis I, a computerized literature search identified 216 effect sizes, corresponding to 97,121 respondents. The total effect size was 0.21, indicating a modest advantage for males. Age had a substantial quadratic influence, with late adolescence having the greatest impact. In Analysis II, gender inequalities were investigated using three large, nationally representative data sets from the National Center for Education Statistics (NCES). All of the NCES effect sizes, which total together the responses of about 48,000 young Americans, showed increased male self-esteem (ds ranging from 0.04 to 0.24). Taken together, the two studies show that males score higher than females on conventional measures of global self-esteem.

Furthermore, the results showed a significant gender difference between males and females, showing females had significantly higher levels of loneliness than males, consistent with previous literature (Khatib, 2012). The sample showed males having a higher level of emotional eating behavior than females which was non-significant and was also not consistent with the studied literature.

According to a study by Khatib (2012)- The study sought to evaluate the association between loneliness, self-esteem, self-efficacy, and gender among UAE college students. The participants were 495 college students from Al Ain University of Science and Technology. Sex was used to stratify the sample. 59% of the responders were female students, whereas 41% were male. The sample's mean age was 21.8 years, with a range of 18 to 36. Loneliness was evaluated using the Revised UCLA Loneliness Scale (Version 3) (Russell, 1996), while self-esteem was examined using the Rosenberg Self-esteem Scale (Rosenberg, 1965). The General Self-efficacy Scale (Jerusalem and Schwarzer, 1979) assessed self-efficacy. The study found that females reported higher levels of loneliness than their male counterparts. Low self-esteem and self-efficacy were linked to higher degrees of loneliness.

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One way ANOVA was also applied to the sample to study the independent groups in order to determine whether there is statistical evidence that the associated population means are significantly different. In the studied sample the means of both the groups both for within the groups and between the groups were different but were not found to be significant. The lack of significance in the analyzed sample might be attributed to the sample's small size, which prevented a larger level of mean difference that could have been significant.

### CONCLUSION

The aim of the above study was to understand the relationship between self esteem, loneliness and emotional eating among young university students. The hypothesis of the study assumed that there would be a negative correlation between feelings of loneliness and self esteem. The results of the study found a significant negative correlation between loneliness and self esteem ( $p$  value = -.541). The hypothesis also found a significant correlation between self esteem and BMI ( $p$  value= -.233). The hypothesis of the study also assumed that there would be significant gender difference between the two groups for self esteem, loneliness and emotional eating. The results found a significant difference between the two gender groups for self esteem, Females, Males ( $t$ -value= -4.209). The results also found a significant difference between the two gender groups for loneliness (  $t$ -value= 2.157). The results for emotional eating also showed a great difference between Males and Females but were found to be non- significant at 0.05 levels. There was significant effect found of BMI on self esteem, loneliness and emotional eating. The hypothesis proves that there is a gender difference among Females and Males in levels of self esteem and feelings of loneliness, with Females having lower self esteem and higher feelings of loneliness. It also shows that BMI, self esteem and Loneliness affect each other and there is a linear correlation among them. Meaning, that a higher dissatisfaction with BMI leads to a lower self esteem and higher feelings of loneliness.

This study was aimed to understand the relationship between self esteem, loneliness and emotional eating in young university students. The study had a number of limitations, starting with the fact that the sampling for the study was biased as the only students that participated in the study were from the region of Punjab which was not representative of a wider population. The study also used only self report measures which can also result in socially desirable answers and compromise the reliability and validity of the sample. The study also had cross sectional data, meaning that the variables were studied only at a particular time; a longitudinal study would explain the variables better. Since the study only focused on young university students the results may not be applicable to older populations and the results cannot be generalized.

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### ***Acknowledgment***

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

### ***Conflict of Interest***

The author(s) declared no conflict of interest.

***How to cite this article:*** Lakhwara, A. (2024). Understanding the Relationship between Self Esteem, Loneliness and Emotional Eating Among Young University Students. *International Journal of Indian Psychology*, 12(3), 2999-3014. DIP:18.01.290.20241203, DOI:10.25215/1203.290