

Research Paper

Emotional Regulation, Empathy and Self-Esteem Among Higher Secondary School Students

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ABSTRACT

The adolescent stage represents the phase of psychological, emotional and social growth. This research examines the relationship of emotional regulation, empathy, and self-esteem, among higher secondary school students. It used a descriptive research design with a sample of 203 students (102 boys, 101 girls) from Thrissur district. The students were assessed on emotional regulation, empathy, and self-esteem using well-established tools—DERS-16, BES, and RSES. Data were analyzed using SPSS, employing Mann-Whitney U test, independent samples t-test, and Spearman's rank correlation. The results showed no significant gender differences in emotional regulation. However, girls scored significantly higher in both empathy and self-esteem compared to boys. As for correlation analysis, no significant association was found between emotional regulation and empathy. A strong negative correlation was however found between self-esteem and difficulties in emotional regulation, suggesting better emotional regulation results in higher self-esteem. Additionally, a significant positive correlation was found between empathy and self-esteem. These findings highlight the importance of fostering emotional regulation strategies, empathy, and resilience to enhance adolescents' mental health and social well-being.

Keywords: *Emotional regulation, Empathy, Self-esteem, Higher secondary school students*

Adolescence, particularly for higher secondary school students aged 16-18, is a crucial and challenging phase marked by emotional fluctuations, academic pressures, identity struggles, and social changes. During this time, students are figuring out who they are, what they want in future, and where they fit in the world, making it essential to examine how they manage emotions, understand others, and perceive themselves. One key skill in adolescence is emotional regulation, which refers to managing one's emotions effectively. For instance, a student who becomes easily upset and struggles to calm down may face challenges in relationships, academics, and health. Emotional regulation, as described by Gross (1998), involves understanding emotions and adjusting emotional expression. Teenagers, who experience intense emotions due to hormonal changes and external pressures, may become overwhelmed without emotional regulation, while those who manage emotions well tend to be more focused and confident. Empathy, the capacity to understand and experience others' emotions, is another important trait for students. It helps

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with forming relationships, resolving conflicts, and promoting kindness in the school environment. Research by Eisenberg et al. (2006) shows that empathy reduces bullying and fosters cooperation among students, which obviously leads to a better atmosphere at school. Self-esteem, or how one values oneself, also plays a significant role. High self-esteem leads to greater confidence, academic success, and resilience, while low self-esteem can cause self-doubt and isolation (Rosenberg, 1965). Adolescents, especially with the rise of social media, often compare themselves to others, which can either boost or harm their self-worth. According to research, students who have a high self-esteem do better in school and in social situation (Baumeister et al., 2003). These three traits—emotional regulation, empathy, and self-esteem—are interconnected. Students with good emotional control are more inclined to have empathy, it raises their sense of self-worth. Similarly, students with high self-esteem may handle emotional challenges more confidently and help others. These qualities work together to shape adolescents' social and academic experiences.

In schools, emotional regulation helps students manage stress, empathy aids in conflict resolution, and self-esteem encourages participation and self-belief. A supportive school environment is crucial for fostering these skills. However, individual differences, such as family background, parenting style, and social influences, also impact emotional and social development. For example, a student from a nurturing family might express emotions more openly than one from a stricter background. The COVID-19 pandemic has further highlighted the importance of mental health, as many students report increased anxiety, loneliness, and uncertainty about their future. Research by Loades et al. (2020) indicates that adolescents had great degrees of loneliness and sadness throughout the pandemic, underscoring the vulnerability of this age group. Studying emotional regulation, empathy, and self-esteem is essential for understanding how students cope with their emotions, relate to others, and view themselves. This knowledge can guide educators, parents, and policymakers in providing the right support and designing effective programs like Social Emotional Learning (SEL), which fosters emotional awareness, empathy, and responsible decision-making. The study of these qualities in higher secondary students, a critical age for academic and personal growth, will help ensure they develop into emotionally strong and socially responsible individuals.

METHODOLOGY

Objectives of the study

1. To assess the levels of emotional regulation, empathy and self-esteem among higher secondary school students
2. To examine the differences in emotional regulation, empathy, and self-esteem among higher secondary school boys and girls.
3. To examine the relationship among emotional regulation, empathy and self-esteem in higher secondary school students

Hypotheses of the study

- **H1:** There is no significant difference in emotional regulation between higher secondary school student boys and girls.
- **H2:** There is no significant difference in empathy among higher secondary school student boys and girls.
- **H3:** There is no significant difference in self-esteem among higher secondary school student boys and girls

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- **H4:** There is no significant relationship between emotional regulation and empathy in higher secondary school students
- **H5:** There is no significant relationship between emotional regulation and self-esteem in higher secondary school students
- **H6:** There is no significant relationship between empathy and self-esteem in higher secondary school students

Sample

A sample is a smaller representation of the population. This study targeted the higher secondary school boys and girls students. The study consists of total 203 participants in which 102 boys and 101 girls of age in between 16 - 18 years. The participants were selected from different higher secondary schools of Thrissur district.

Measurement tools used in study:

- **Sociodemographic Data:** Personal details like name, age, gender, class & course, socio economic status, residential area, currently taking any continuous medication, family type, hobbies / extra-curricular activities, overall percentage in first-term exam and social media & technology use (hrs/ day)
- **Difficulty in Emotional Regulation Scale:** Bjureberg et al. created the Difficulties in Emotion Regulation Scale-16 (DERS-16) which is a condensed form of the original 36-item Difficulties in Emotion Regulation Scale (DERS) which was created by Gratz and Roemer in 2004.
- **Basic Empathy Scale:** The Basic Empathy Scale (BES) was created by Jolliffe and Farrington in 2006. Cognitive (9 items) and affective (11 items) empathy are measured by this 20-item self-report questionnaire.
- **Rosenberg Self-esteem Scale:** A 10-item, 4-point self-report scale developed by Rosenberg (1965) to assess global self-esteem.

Procedure

The study aimed to assess emotional regulation, empathy, and self-esteem among higher secondary school students. It followed a quantitative approach, using standardized tools: the DERS-16, Basic Empathy Scale, and Rosenberg Self-Esteem Scale. Participants, aged 16–18, were selected from various schools in Thrissur district. Informed consent and voluntary participation were ensured, and confidentiality was maintained. Participants received clear instructions and took approximately 20–25 minutes to complete the questionnaires. Doubts were cleared during administration. Data analysis was performed by using descriptive statistics, Mann-Whitney U test, independent samples t-test, and Spearman's rank correlation.

RESULTS AND DISCUSSION

Table 1 The frequency and percentage analysis of emotional regulation among higher secondary school boys and girls students.

Variable	Range	Boys (N=102)		Girls (N=101)	
		Frequency	Percentage	Frequency	Percentage
Difficulty in emotional Regulation	No Difficulty	33	32.35%	23	22.77%
	Mild Difficulty	44	43.14%	48	47.52%
	Moderate difficulty	24	23.53%	24	23.76%
	Severe difficulty	1	0.98%	6	5.94%

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Table 1 shows noticeable gender differences in emotional regulation among higher secondary students. A greater number of boys reported that no difficulty in managing emotions as compared to girls, suggesting that stronger emotional resilience in boys students. On the other hand, girls were more likely to experience mild emotional difficulties. Both boys and girls showed similar levels of moderate emotional difficulties. However, severe emotional regulation difficulties were more noticeable among girls, which suggest that they have higher vulnerability to intense emotional struggles. These findings pointed to the need for emotional support, mainly for girls students, to enhance their coping and emotional regulation skills.

Table 2 The frequency and percentage analysis of empathy among higher secondary school boys and girls students.

Variable	Range	Boys (N=102)		Girls (N=101)	
		Frequency	Percentage	Frequency	Percentage
Empathy	Low empathy	0	0%	0	0%
	Moderate Empathy	20	19.6%	8	7.92%
	High empathy	79	77.45%	76	75.25%
	Very high empathy	3	2.94%	17	16.83%

The Table 2 shows that generally empathy is well-developed among both boys and girls students, with no students showing low empathy. Meanwhile more boys than girls fall into the moderate empathy level, the majority students in both groups show high levels of empathy. Notably, a large percentage of girls exhibit very high empathy as compared to boys, suggesting that girls students may be more inclined toward strong empathetic responses. These results support existing research which highlights gender differences in empathy and also emphasizes the importance of fostering emotional intelligence in educational settings.

Table 3 The frequency and percentage analysis of self-esteem among higher secondary school boys and girls students.

Variable	Range	Boys (N=102)		Girls (asN=101)	
		Frequency	Percentage	Frequency	Percentage
Self - esteem	Low self-esteem	3	2.94%	1	0.99%
	Moderate self-esteem	58	56.9%	50	49.5%
	High Self-esteem	41	40.2%	50	49.5%

The result shows that most higher secondary students have a high level of self-esteem, while only a smaller number reported having low self-esteem. A majority of students are in moderate range, suggest that they may have a balanced and stable self-image. Moreover, more girls than boys reported high self-esteem, which means that girls have slightly greater sense of self. This pattern shows the influences of supportive environments, personal strengths, or social connections. Self-esteem among students seems to be positive, but still continued support through school-based mental health services remains important for those who facing challenges.

Table 4 Descriptive analysis of emotional regulation, empathy and self-esteem.

	Emotional Regulation	Empathy	Self-esteem
Mean	38.55	69.23	18.85
Median	37.00	69.00	19.00
Standard deviation	11.343	8.224	4.149
Skewness	.437	.341	-.201
Std. error skewness	.171	.171	.171
Kurtosis	-.285	.390	.436
Std. error kurtosis	.340	.340	.340
Shapiro-Wilk W	.978	.988	.987
Shapiro-Wilk p	.003	.101	.052

Table 4 provide a descriptive overview of emotional regulation, empathy, and self-esteem among higher secondary school students, show how these traits vary across the group. Based on analysis of DERS-16, generally, the students experience a moderate level of difficulty in emotional regulation. The median scores show that, most students are in middle range, where a few students with higher difficulties push the average up slightly. The data shows moderate variations in responses, and a slight skew toward higher scores. Shapiro-Wilk test confirms that emotional regulation scores are not normally distributed, suggesting that the personal and environmental factors might influence students' ability to manage emotions. These findings highlight the need to identify and support students who are struggling with emotional regulation.

The results show that students generally have a strong level of empathy, with most students are in average level, which indicate a balanced distribution. There are some moderate variations in the data, only a small skew, suggesting that most students score are near to the average level. Shapiro-Wilk test also confirms that the empathy scores are normally distributed. These findings suggest that generally while there is a balanced empathy level, but there is still need a potential to grow through social and emotional development programs to enhance students' interpersonal skills and connect more deeply with others.

The self-esteem scores show a balanced distribution, with majority of students showing a balanced level of self-esteem. There is a slight negative skew, which suggests that some students show particularly high self-esteem. There is a small variation in scores, and the scores are normally distributed. These results indicate that even the self-esteem levels are generally balanced, additional support through peer mentoring or counseling are also beneficial for students with lower confidence.

Table 5 Descriptive analysis of emotional regulation among boys and girls.

	Gender	Emotional regulation	Empathy	Self-esteem
Mean	Boys	37.16	66.80	18.02
	Girls	39.96	71.67	19.69
Median	Boys	35.50	68.00	18.00
	Girls	37.00	70.00	19.00
Std. deviation	Boys	11.374	7.189	4.353
	Girls	11.193	8.509	3.770
Skewness	Boys	.343	-.183	-.243
	Girls	.576	.487	.060
Std. error skewness	Boys	.239	.239	.239
	Girls	.240	.240	.240
Kurtosis	Boys	-.562	-.194	.514

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	Girls	-.073	.029	-.079
Std. error kurtosis	Boys	.474	.474	.474
	Girls	.476	.476	.476

The table 5 gives a descriptive analysis of emotional regulation, empathy, and self-esteem among higher secondary school boys and girls, by providing statistical measures like mean, median, standard deviation, skewness, and kurtosis.

On average, girls reported slightly more difficulty in emotional regulation as compared to boys, which is clearly seen in both mean and median scores. The data showed more variation in boys' scores, which probably means there's a wider range in how they deal with emotions. As both distributions are positively skewed, a stronger skewness can be seen in girls scores, which shows that a few students experience particularly high difficulty levels. These statistical patterns show some small gender differences in emotional regulation, where girls might be going through emotional difficulties more regularly, while boys show more ups and downs in how they cope.

The mean values indicated that girls obtained higher scores in empathy as compared to boys. However, both groups have nearly similar median values. Girls show more variation in scores. The distribution for boys scores were slightly negatively skewed, while girls scores were slightly positively skewed, which suggest that most students scored near the average, but some exhibited particularly low or high levels of empathy. These statistical patterns pointed to gender differences in empathy, where girls generally show stronger empathetic tendencies. However, there would be individual differences that might possibly influenced by social or developmental factors.

The mean score shows that girls have high self-esteem than boys. Boys' scores showed slightly more variation, indicates a wider range in their self-esteem. Except few extreme values, both groups have a nearly symmetrical distribution. As most students exhibited moderate level of self-esteem, girls showed marginally higher and more consistent levels.

Table 6 Mann-Whitney U-test for determining the difference between boys and girls in emotional regulation.

Variable	Gender	N	Mean Rank	U	p
Emotional Regulation	Boys	102	95.08	5856.500	0.092
	Girls	101	108.99		

Due to the non-normal distribution of emotional regulation scores, the Mann-Whitney U test was applied to compare boys and girls. The analysis showed a p-value greater than the significance level, which indicates that there is no statistically significant difference between two groups. Which means that both boys and girls showed comparable levels of emotional regulation.

The results suggest that emotional regulation programs should be include. Supporting both boys and girls equally in developing healthy emotional coping strategies that can contribute to better psychological well-being.

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Table 7 Independent samples t-test for determining the difference between boys and girls in empathy

Variables	Boys		Girls		t(df)	p
	M	SD	M	SD		
Empathy	66.80	7.189	71.67	8.509	4.406 (201)	<.001

As the empathy scores are normally distributed, an independent samples t-test was conducted to assess gender differences. The result suggests a significant gender difference in empathy as the girls obtained higher scores than boys. The descriptive statistics also support this result, which shows a higher mean and slightly greater variation in scores among girls than boys. These findings suggest that gender might influence empathy levels during adolescence, where girls show greater empathetic capacity.

Table 8 Independent samples t-test for determining the difference between boys and girls in self-esteem.

Variables	Boys		Girls		t(df)	p
	M	SD	M	SD		
Self-esteem	18.02	4.353	19.69	3.770	2.927 (201)	.004

An independent samples t-test was used to evaluate gender differences because self-esteem scores were distributed normally. The result suggests that there is a significant gender difference as the girls obtained higher score in self-esteem than boys. The descriptive statistics also support this finding, which shows a higher mean score for girls and slightly greater variation in scores among boys. These findings suggest that gender plays a key role in shaping self-esteem during adolescence, emphasizing the need for supportive interventions that consider individual and contextual factors.

Table 9 Correlation between emotional regulation, empathy and self-esteem

		Emotional Regulation	Empathy	Self-esteem
Spearman's rho	Emotional regulation	Correlation coefficient	1.000	0.32
		Sig.(2 tailed)	.	.651
	Empathy	Correlation coefficient	0.32	1.000
		Sig.(2 tailed)	.651	.
	Self-esteem	Correlation coefficient	-.240**	.267**
		Sig.(2 tailed)	<.001	<.001

**Correlation is significant at the 0.01 level (2-tailed).

The relation between self-esteem, empathy, and emotional regulation was evaluated using Spearman's Rank Correlation test.

The analysis showed a weak positive correlation between emotional regulation and empathy, but it was not statistically significant. This indicates that students' ability to manage emotions was not meaningfully related to their level of empathy. So, in this sample, emotional regulation and empathic abilities are function independently.

The analysis revealed a significant negative correlation between emotional regulation and self-esteem. This means that students with lower difficulties in regulating their emotions tend to have higher self-esteem. Since the current study used the DERS-16 scale, where lower scores indicate fewer difficulties in emotional regulation, this negative correlation

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confirms that students with better emotional control tend to report a more self-esteem. This finding supports previous research suggesting that enhanced emotional regulation is linked to higher self-esteem.

The result shows a significant positive correlation between empathy and self-esteem. Students who scored higher in empathy also have stronger self-esteem. This suggests that empathetic traits may help to feel a better positive self-esteem. While some literature warns that excessive empathy might lead to emotional fatigue, the current findings indicate that empathy, in this context, functions as a psychological asset rather than a liability.

In summary, better emotional regulation appears linked to higher self-esteem, and greater empathy also seems to boost self-esteem among students. However, emotional regulation difficulties and empathy were not strongly connected, suggesting other factors like personality or social environment may influence these relationships.

Major Findings

- Most students have less difficulty in managing their emotions, while few students showed moderate to severe difficulties.
- Most students showed a high level of empathy, while only a small number seemed to have moderate or lower levels.
- The majority of participants reported high self-esteem, only a small number seemed to have moderate or low level of self-esteem.
- Girls seemed to be more empathetic and also slightly more difficulty managing their emotions, whereas girls showed a slightly higher self-esteem than boys.
- There is a negative correlation between emotional regulation difficulties and self-esteem, which means students who were low difficulty in emotional regulation tend to have a positive sense of self
- There is a positive correlation between empathy and self-esteem, proposing that more empathetic students tended to have better self-esteem.
- There is no significant correlation between emotional regulation difficulties and empathy.

CONCLUSION

The research concluded that there is no significant gender difference in emotional regulation among higher secondary school students. However, there is a significant gender difference in empathy and self-esteem, where girls show higher levels in both than boys. The study found that students with better emotional regulation tend to have higher self-esteem. Additionally, a significant positive relationship discovered between empathy and self-esteem, which indicates that students who are more empathetic also show higher levels of self-esteem. However, there is no significant relationship was found between emotional regulation and empathy. Hence, some of the hypotheses are accepted and others are rejected. The study is very relevant as emotional regulation, empathy, and self-esteem are key psychological aspects of adolescent development. These factors strongly influence students' social adjustment, self-image, and mental well-being. In our study, we included a limited number of participants aged 16–18 from higher secondary schools across Thrissur district, and the findings give us a deeper understanding of the emotional and psychological aspects of today's adolescents.

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Conflict of Interest

The author(s) declared no conflict of interest.

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