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Gender Differences in Emotional Intelligence and Multidimensional Emotional Empathy among University Students of Karachi

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ABSTRACT

In this study, university students' multidimensional emotional empathy and emotional quotient across gender were evaluated. Moreover, the connection between multidimensional emotional empathy and emotional intelligence. 200 students (M=100 and F=100) from different universities of Karachi were the target participants. convenient sampling method was use to collect the data. The scales used in this study were the Multidimensional Emotional Empathy Scale by Caruso and Mayer in 1998, and the Wong and Law Emotional Intelligence Scale (WLEIS) by Wong and Law in 2002. The investigation's findings demonstrated that women possess greater emotional intelligence than men. Female showed more empathy than those who were male. The value of p is less than 0.05. The positive correlation among the emotional intelligence and empathy suggests that emotional awareness enhances the empathic understanding of an individual. These findings emphasize the integration of emotional intelligence and empathy training in higher education, but through gender sensitive programs. This would help in development of interpersonal growth and support emotional growth.

Keywords: Emotional Intelligence, Emotional Empathy, Multidimensional Emotional Empathy

Introduction

Emotional intelligence is a multifaceted concept. It not only plays a role in personal development but also holds an importance in academic success and social functioning. According to Salovey and Mayer (1990), emotional intelligence is the capacity to keep track of one's own and other people's feelings and emotions, make distinctions between them, and utilize this knowledge to inform decisions and actions. Similar to

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this, Goleman (1998) defined emotional intelligence as a set of skills that improves job and administrative performance.

Two components of emotional intelligence are similar. On the one hand, it requires acknowledging one's own feelings and then controlling them to promote emotional competence. On the other side, it also includes their capacity for managing the emotions of others in order to foster positive interpersonal relationships. Recent studies have emphasized on its significance for both education and psychological context. As per the findings of Shengyao et al. (2024), emotional intelligence (EI) is said to predict psychological well-being and academic resilience among university students.

Empathy is a concept best described as a set of constructs, related in a way that concerns responsivity to others. (Davis, 1983). Enhanced personal connections, high work satisfaction and better mental health are some positive outcomes linked empirically to both emotional intelligence and multidimensional empathy. As per the recent neuroscience research brain structure and there networks both underpins this constructs. According to Arioli et al. (2025) the sex-linked grey-matter differences in the insula and amygdala tied to facets of emotional empathy, commonly seen in females. Further Keum et al. (2025) explained how through similar principles anterior cingulate cortex activates, highlighting the neural circuit for affective empathy. A graph-learning studies by Sasanka et al. (2024) demonstrated the interaction between insula, amygdala, thalamus, and angular gyrus during naturalistic stimulus processing. The psychological concept is understood by Shi et al. (2023) where emotional intelligence mediates the link between empathy and resilience in emerging adults, illustrating how cognitive regulation of emotions can translate empathic capacity into behavioral adaptation. Multidimensional empathy and emotional intelligence are two important concepts that helps in successful social interaction. According to the recent findings people with high EI are said to have a high multidimensional empathy. This helps them to comprehend and react to others' emotions. According to Saluja and Bhambri (2025) university students reported a moderate positive correlation between self-reported EI and empathy Similarly, Alqarni (2024) reported a positive association between EI and empathy in nursing students. This shows that emotion regulation and empathy reliably co-occur in professional learning contexts. A mixed result is been reported for EI across different cultural contexts. For example, a study conducted in China in 2023 found female medical students scored higher in EI, males exhibited avoidant coping strategies linked to lower EI (PMC, 2023). Similarly, nursing students of China similar pattern for gender difference for both Empathy and EI, however the problem-solving skills were equal for both genders. Further Urbón, Salavera, and Usán (2025) reported a gender-based differences where females generally scored higher in cognitive empathy and social-emotional abilities. However, the results were said to be moderated by cultural contexts. Multidimensional empathy has the core concept of cognitive (perspective taking) and affective (empathic concern) domains. This concept was found high in female university students among various cultures. A longitudinal study on medical students displayed women scored significantly higher than men on affective empathy (Empathic Concern, $p < 0.0001$), with no difference in cognitive empathy (Perspective Taking). Similarly, a cross-sectional study on nursing students of China reported that gender does not directly

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predict empathy scores. However female students showed stronger correlations between emotional intelligence and empathy dimensions. (Pub Med).

In Pakistan, a complex pattern is seen among the studies. Chaudhry et al. (2013) and Satti et al. (2018) reported females outperforming males in EI components like emotional regulation and empathy. However Nasir & Masrur (2010) and Shehzad & Mahmood (2013) reported no gender base difference that highlighted the need for cultural sensitive need. It is clear from the Pakistani setting that female pupils outperformed male students in terms of emotional intelligence. Along with "overall emotional intelligence," this dominance was seen in all aspects of emotional intelligence. (Satti, Ghaffar, Fida, 2018)

This study explores examining the differences between male and female university students in terms of emotional consciousness and emotional empathy. It becomes critical to identify which gender group is more emotionally intelligent and adapts to life in higher education the best.

Objectives:

Is there any relationship between emotional intelligence and emotional empathy among university students?

Is there any significant gender difference among university students in terms of their Emotional Intelligence?

Is there any significant gender difference among university students in terms of their Emotional Empathy?

Methodology

Participant:

200 undergraduate and post graduate students from a university, including 100 male and 100 female, participated in this study. They were chosen by conceive and purposive sampling. Students' ages ranged from 18 to 25. They each had a different major.

Measures:

The instruments which were used in the study are given below:

Multi-Dimensional Emotional Empathy Scale:

The Multi-Dimensional Emotional Empathy Scale, created by Caruso and Mayer in 1998, was used to evaluate the participant's emotional empathy. There are thirty items on this scale, and each one is rated from 1 to 5. In order to lessen response bias, six items on the scale were written negatively. Both good and bad emotional circumstances were attempted to be included. The instrument's alpha reliability of 0.86 indicates that it satisfies the psychometric standard.

Wong and Law Emotional Intelligence Scale (WLEIS):

The Wong and Law Emotional Intelligence Scale, which was developed in 2002, was used to measure the emotional intelligence of the participants. This scale has 16 questions with a maximum score of 7 on the Lickert scale. Researchers from all over the world utilize it because it is a reliable and valid tool. This instrument has

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reliability of 0.893.

Result

Table 1: Correlation between Emotional Intelligence and Emotional Empathy

Variable	N	M	SD	1	2
General Empathy	200	72.79	7.834	-	
Emotional intelligence	200	60.24	6.777	.638**	-

The table 1 indicate that there is strong correlation (0.638) between emotional intelligence and multidimensional emotional empathy.

Table 2: Independent t. Test for comparing male and female

Variable	Male		Female		t (198)	p	Cohen's D
	M	SD	M	SD			
General Empathy	70.06	5.864	75.53	8.529	-5.268	.000	0.747
Emotional intelligence	59.27	6.453	61.20	6.984	-2.030	.044	0.287

It can be drawn that there is significant gender difference in Emotional intelligence and multidimensional emotional empathy. Female are more emotional intelligent (M=61.2, SD= 6.98) than males (M=59.2, SD=6.45). Higher level of empathy was observed in females student (M=75.5, SD=8.52) than males student (M=70.0, SD=5.86).

Discussion

Regarding the initial research issue, this study shows a significant positive relationship between multidimensional emotional empathy and emotional intelligence. Every person has a unique emotional intelligence profile that details their specific strengths and shortcomings. In general, it is accepted that women are more emotionally expressive than men and that they are more sensitive to others' feelings (Brody & Hall, 2000). Man is not socially permitted to express his feelings as forcefully, on the other hand. He is always characterized as being assertive, more adaptable, and better at handling difficult situations (Fernandez-Berrocal, 2012).

Bar-On (2000) (as referenced in Moafian & Ghanizadeh, 2009) described emotional intelligence as a lifelong skill developed through instruction, programming, and treatment. It can be defended that as per Bar On theories emotional intelligence can be increased by receiving training and therapy. However, EI is a trait shared by every individual, studies revealed that women exhibit a higher level of emotional intelligence than men do (Joseph & Newman, 2010; Patel, 2017). One of the reasons of this findings can be the maternal tendencies of women that contributes to stronger relations with students. Further the concept of blended family is ingrained in Pakistan.

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Parents are found to mentally prepare their daughters to take responsibility in the blended culture, once they get married. They are given a lifelong training on interpersonal skills and patience. (UNESCO, 2011).

The finding of this study for association between empathy and EI further resonates with Saluja and Bhambri (2025) found a moderate positive correlation between self-reported EI and empathy among university students. A similar finding was reported by Alqarni (2024) for nursing students that with high high EI comes a high empathy. This indicated the concurrent development of these social-emotional capacities in learning environments. This further shows that emotional regulation and empathic response are intricately linked and tend to co-occur. Furthermore the positive relationship found between EI and empathy can also be explained by recent research of Shi et al. (2023) highlighting how emotion regulation acts as a mediating mechanism. This mechanism mediates a link between empathy and resilience in emerging adults. This further implies the ability to understand and regulate emotions enables individuals to channel empathic concern into adaptive behaviors. Graph-based theory evidence was also proposed by Sasanka et al. (2024). He illustrated the structure and their network that how brain regions such as the insula, amygdala, and angular gyrus interact during emotional processing. These findings gave an in depth understanding of why individuals with high EI also shows high empathy, both in emotionally complex and natural scenarios. Similarly, the results of this study have practical implications. As EI and empathy are both skills for which an individual can be trained as per (Bar On 2000; as cited in Moafian & Ghanizadeh, 2009), interventions such as emotional literacy training and role-play exercises can be integrated into university curricula. This will enhance the socio emotional functioning of the students especially where interpersonal skills are required more.

The gender-based differences are observed in various cultures consistently. For example, Shengyao et al. (2023) reported female medical students of China scored significantly higher in emotional intelligence as compared to male. Male on the other hand use avoidant coping strategies. Urbón, Salavera, and Usán (2025) also reported a high cognitive empathy and social-emotional abilities among females, moderated by cultural differences. The neuropsychological underpinnings further affirm these gender distinctions. According to Arioli et al. (2025), females have more grey matter in the brain region such as insula and amygdala, this heightened the empathy in them. Keum et al. (2025) also reinforced similar phenomenon where he demonstrated an activation of anterior cingulate cortex in females during empathic tasks, showing neural support for affective empathy.

In the Pakistani context, our results align with Satti et al. (2018) and Chaudhry et al. (2013), where female students were seen to outperform male in emotional regulation and empathy domains of EI. These patterns are often said to be culturally shaped. As per the finding of UNESCO (2011), Pakistani girls are socialized from a young age into emotionally expressive and nurturing roles, especially when preparing for taking family responsibility. The trainings for females help them foster both interpersonal sensitivity and emotional awareness, which might explain the high performance of both EI and empathy in them.

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