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Gender Differences in Emotion Dysregulation, Impulsivity, and Personality Disorder Traits: A Comparative Study of Pakistani University Students

Sidra Batool	Department of Psychology, University of Peshawar, Pakistan. Sidrabatoolbangash14@gmail.com
Prof. Dr. Erum Irshad	Department of Psychology, University of Peshawar, Pakistan

Abstract: *Background: Epidemiological studies have consistently documented gender differences in personality disorder (PD) prevalence, with females overrepresented in borderline and histrionic PDs and males overrepresented in antisocial, schizoid, and paranoid PDs. Emotion dysregulation (ED) and impulsivity are transdiagnostic mechanisms underlying PD pathology, yet gender differences in these mechanisms—and whether they explain gender differences in PD traits—remain poorly understood, particularly in non-Western cultural contexts.*

Objective: This study examined gender differences in (a) emotion dysregulation (total and subscales), (b) impulsivity (total and subtypes), and (c) personality disorder traits across Clusters A, B, and C. We also tested whether gender moderates the ED-PD and impulsivity-PD relationships, and whether impulsivity mediates the ED-PD relationship differently for males and females.

Method: University students in Pakistan (N = 366; 183 male, 183 female; age 17–19 years) completed the Difficulties in Emotion Regulation Scale (DERS), Barratt Impulsiveness Scale (BIS-11), and Short-Form of the Coolidge Axis II Inventory (SCATI). Independent-samples t-tests, moderation analysis (PROCESS Model 1), and moderated mediation analysis (PROCESS Model 7) were conducted with 5,000 bootstrap resamples.

Results: Females scored significantly higher than males on DERS total ($d = 0.31$, $p = .02$), non-acceptance of emotional responses ($d = 0.42$, $p < .001$), limited access to strategies ($d = 0.35$, $p = .01$), and Cluster B traits ($d = 0.44$, $p < .001$). Males scored significantly higher on lack of emotional awareness ($d = 0.38$, $p = .003$), Cluster A traits ($d = 0.29$, $p = .03$), and motor impulsivity ($d = 0.49$, $p < .001$). No gender differences emerged for Cluster C traits. Gender did not moderate the ED-PD relationship (interaction B = -0.12, $p = .18$) or the impulsivity-PD relationship (interaction B = 0.08, $p = .34$). Mediation analysis revealed that impulsivity partially mediated the ED-PD relationship for both genders, with slightly stronger indirect effects for females (indirect = 0.112) than males (indirect = 0.086), though the difference was not significant (index of moderated mediation = -0.026, CI [-0.089, 0.041]).

Conclusions: Gender differences in ED and PD traits mirror Western clinical epidemiology, with females showing higher ED and Cluster B traits and males showing lower emotional awareness and Cluster A traits. However, the pathways from ED to PD traits—and from ED to impulsivity to PD traits—are gender-invariant, suggesting that while mean levels differ, the underlying mechanisms operate similarly for males and females. These findings have implications for gender-sensitive assessment and intervention, with cultural considerations for the Pakistani context where gender norms shape emotional expression and help-seeking.

Keywords: gender differences, emotion dysregulation, impulsivity, personality disorders, moderation, mediation, Pakistan

Introduction

Epidemiological studies have consistently documented gender differences in personality disorder (PD) prevalence across community and clinical samples (Grant et al., 2008; Lenzenweger et al., 2007; Torgersen et al., 2001). These differences are most pronounced for specific disorders, reflecting complex interactions between biological, psychological, and sociocultural factors.

Females are overrepresented in borderline personality disorder (BPD), with estimated female-to-male ratios of approximately 3:1 in clinical samples and 2:1 in community samples (Grant et al., 2008; Lenzenweger et al., 2007). BPD is characterised by emotional instability, identity disturbance, and impulsivity—features that may be more readily identified in females due to diagnostic criteria emphasising emotional expression (American Psychiatric Association [APA], 2022). Similarly, histrionic personality disorder (HPD) shows a female predominance of approximately 2:1, with features of excessive emotionality and attention-seeking behaviour that may be more socially acceptable in females.Conversely, males are overrepresented in antisocial personality disorder (ASPD), with estimated male-to-female ratios of approximately 3:1 in community samples (Grant et al., 2008; Lenzenweger et al., 2007). ASPD is characterised by rule-breaking, aggression, and lack of remorse—features that may be more readily identified in males due to societal expectations and diagnostic criteria. Males also show higher prevalence in schizoid personality disorder (SZPD), with estimated ratios of approximately 2:1, and paranoid personality disorder (PPD), with ratios of approximately 1.5:1 (Grant et al., 2008). Cluster C PDs (avoidant, dependent, obsessive-compulsive) show more balanced gender distributions, with some studies showing slight female predominance in dependent PD and slight male predominance in obsessive-compulsive PD (OCPD), though findings are less consistent (Lenzenweger et al., 2007; Torgersen et al., 2001).

Explanations for Gender Differences in PD Prevalence

Several explanations for these gender differences have been proposed, spanning biological, psychological, and sociocultural domains:

Artifact Hypotheses: Gender bias in diagnostic criteria or clinician judgment may contribute to differential diagnosis. For example, borderline PD criteria emphasising "emotional instability" may capture female presentations more readily than male presentations characterised by anger and aggression (Bjorklund, 2006). Similarly, antisocial PD criteria emphasising rule-breaking may capture male presentations more readily than female presentations characterised by relational aggression.

Biological Hypotheses: Gender differences in stress reactivity, hormonal influences (testosterone, estrogen, oxytocin), and neural circuitry (amygdala reactivity, prefrontal regulation) may contribute to differential vulnerability (Chaplin & Aldao, 2013). For example, estrogen may influence emotional reactivity, while testosterone may influence aggression and impulsivity.

Socialisation Hypotheses: Differential socialisation of emotional expression by gender may contribute to PD differences. Females are socialised to express internalising emotions (sadness, fear), while males are socialised to suppress "vulnerable" emotions and express externalising emotions (anger) (Brody & Hall, 2008). This may contribute to females developing internalising PDs (BPD, HPD) and males developing externalising PDs (ASPD).

Trauma Hypotheses: Gender differences in exposure to specific types of trauma may contribute to PD differences. Females are more likely to experience childhood sexual abuse and emotional abuse, which are risk factors for BPD (Zanarini et al., 2011). Males are more likely to experience physical violence and conduct problems, which are risk factors for ASPD (Grant et al., 2008).

Gender Differences in Emotion Dysregulation

Research on gender differences in emotion dysregulation (ED) has yielded consistent findings (Nolen-Hoeksema, 2012; Weinberg & Klonsky, 2009). Females generally report higher levels of ED than males, particularly in adolescence and young adulthood. This is consistent with research showing that females report more intense and frequent negative emotions, greater emotional reactivity, and more difficulty regulating emotions (Nolen-Hoeksema, 2012).

Females report greater non-acceptance of emotional responses than males (Gratz & Roemer, 2004; Neumann et al., 2010). This may reflect socialisation that teaches females to view strong emotions as problematic or shameful. Females report greater difficulty accessing effective emotion regulation strategies than males (Gratz & Roemer, 2004; Neumann et al., 2010). This may reflect gender differences in coping style, with females more likely to use rumination and males more likely to use distraction. Males generally report lower emotional awareness than females (Levant et al., 2009; Salminen et al., 1999). This is consistent with research on alexithymia, which shows that males are more likely to have difficulty identifying and describing emotions. This may reflect socialisation that discourages males from attending to emotional experiences. Findings on gender differences in impulse control difficulties are less consistent, with some studies showing males reporting greater impulse control difficulties (particularly in behavioural domains) and others showing no gender differences (Weinberg & Klonsky, 2009).

Gender Differences in Impulsivity

Research on gender differences in impulsivity has yielded mixed findings depending on the impulsivity subtype examined (Patton et al., 1995; Stanford et al., 2009):

Motor Impulsivity: Males consistently score higher on motor impulsivity than females (Patton et al., 1995; Stanford et al., 2009). Motor impulsivity involves acting without thinking, impatience, and behavioural disinhibition—features that may be more consistent with traditional male gender roles and may be more readily expressed in males.

Attentional Impulsivity: Findings on gender differences in attentional impulsivity are mixed. Some studies show no gender differences, while others show females scoring higher on attentional impulsivity (Stanford et al., 2009). This may reflect gender differences in cognitive processing, with females more likely to experience racing thoughts and cognitive instability.

Non-Planning Impulsivity: Some studies show males scoring higher on non-planning impulsivity than females (Patton et al., 1995), while others show no gender differences (Stanford et al., 2009). Non-planning impulsivity involves a present-oriented cognitive style and poor future planning.

Gender as Moderator of the ED-PD and Impulsivity-PD Relationships

While gender differences in mean levels of ED, impulsivity, and PD traits are well-documented, whether gender moderates the relationships among these variables is less clear. Several theoretical perspectives make different predictions:

1. **Moderation Hypothesis:** Gender may moderate the ED-PD relationship such that ED is a stronger predictor of PD traits for females than for males. This would be consistent with research showing that ED is more strongly associated with internalising disorders (which are more common in females) than externalising disorders (which are more common in males) (Weiss et al., 2013).
2. **Invariance Hypothesis:** Gender may not moderate the ED-PD relationship, meaning that ED predicts PD traits equally strongly for males and females. This would be consistent with transdiagnostic conceptualisations of ED as a general risk factor for psychopathology (Beauchaine & Cicchetti, 2019).
3. **Cross-Over Hypothesis:** The ED-PD relationship may be stronger for females for some PDs (e.g., Cluster B) and stronger for males for other PDs (e.g., Cluster A). This would be consistent with the different PD profiles observed in males and females.

Cultural Considerations in the Pakistani Context

The present study was conducted in Pakistan, a collectivist, predominantly Muslim society where gender norms differ from Western individualistic societies (Matsumoto & Hwang, 2012). Several cultural factors are relevant to understanding gender differences in ED, impulsivity, and PD traits:

1. **Gender Role Expectations:** In Pakistani culture, traditional gender roles are often emphasised, with distinct expectations for male and female behaviour. Males are expected to be strong, independent, and emotionally restrained, while females are expected to be nurturing, emotionally expressive, and relationship-focused (Ali & Yousaf, 2022; Anwar et al., 2024). These role expectations may shape the development and expression of ED, impulsivity, and PD traits.

2. **Emotional Expression Norms:** Emotional expression is differentially socialised by gender in Pakistan. Males are expected to suppress "vulnerable" emotions (sadness, fear, shame), while females may be permitted to express certain emotions but not anger (Matsumoto & Hwang, 2012). This may contribute to gender differences in emotional awareness (lower in males) and ED (higher in females).

3. **Stigma and Help-Seeking:** Mental health is highly stigmatised in Pakistan, and this stigma may be more pronounced for males (Khalily, 2011). Males may be less willing to acknowledge emotional difficulties or seek help, contributing to underreporting of ED and PD traits.

4. **Collectivism and Family Honour:** The collectivist nature of Pakistani society emphasises family honour and social harmony. Behaviours that disrupt family harmony (including emotional expression and help-seeking) are strongly discouraged. This may be particularly relevant for females, who may face greater pressure to maintain family honour through emotional restraint (Ali & Yousaf, 2022).

Recent Pakistani studies have confirmed that cultural norms of emotional suppression contribute significantly to internalised distress and maladaptive coping among university students (Anwar et al., 2024). Gender differences in these patterns have also been documented, with females showing higher internalising distress and males showing higher externalising behaviours.

The Present Study

This study examined gender differences in ED, impulsivity, and PD traits, and tested whether gender moderates the ED-PD and impulsivity-PD relationships, and whether impulsivity mediates the ED-PD relationship differently for males and females. Based on theoretical frameworks and prior evidence, we hypothesised:

Hypothesis 1: Females will score significantly higher than males on (a) DERS total, (b) non-acceptance of emotional responses, (c) limited access to strategies, and (d) Cluster B PD traits.

Hypothesis 2: Males will score significantly higher than females on (a) lack of emotional awareness, (b) Cluster A PD traits, and (c) motor impulsivity.

Hypothesis 3: There will be no significant gender differences in Cluster C PD traits.

Hypothesis 4: Gender will not moderate the ED-PD relationship (invariance hypothesis), meaning that ED will predict PD traits equally strongly for males and females.

Hypothesis 5: Gender will not moderate the impulsivity-PD relationship, meaning that impulsivity will predict PD traits equally strongly for males and females.

Hypothesis 6: Impulsivity will mediate the ED-PD relationship for both genders, with no significant gender difference in the indirect effect (index of moderated mediation not significant).

Method

Research Design

This study employed a cross-sectional, correlational design comparing males and females on ED, impulsivity, and PD traits. The design was selected to: (a) examine gender differences in ED, impulsivity, and PD traits, (b) test whether gender moderates the ED-PD and impulsivity-PD relationships, and (c) test whether impulsivity mediates the ED-PD relationship differently for males and females.

Participants and Sampling Procedure

A multi-stage sampling procedure was employed: (1) Three faculties (Arts & Humanities, Social Sciences, Sciences) were randomly selected from all faculties at the University of Peshawar using the fish-bowl technique (simple random sampling without replacement). (2) From each selected faculty, five departments were further randomly selected using the same fish-bowl technique. (3) Within each selected department, students were recruited through convenience sampling. Research assistants visited classrooms, explained the study purpose, and invited all eligible students to participate.Inclusion Criteria: Participants were required to: (a) be enrolled in the 1st or 3rd semester of a Bachelor of Science (BS) 4-year program at the University of Peshawar, (b) be between 17 and 19 years of age (late adolescence), and (c) provide written informed consent.Exclusion Criteria: Participants were excluded if they: (a) reported a history of psychiatric or serious medical conditions, (b) were currently receiving psychiatric or medical treatment, (c) had a physical disability that would interfere with questionnaire completion, (d) were enrolled in BS 5th or 7th semester, or (e) were younger than 17 or older than 19 years.

Instruments

Demographic Information Sheet

A brief demographic questionnaire assessed age, gender, semester, department, faculty, and prior psychiatric or medical history (for exclusion screening).

Difficulties in Emotion Regulation Scale (DERS)

The DERS (Gratz & Roemer, 2004) is a 36-item self-report measure assessing six dimensions of emotion dysregulation. Items are rated on a 5-point Likert scale (1 = *almost never* to 5 = *almost always*). Higher scores indicate greater dysregulation. In the present sample, Cronbach's α was .93 for the total scale, and subscale alphas ranged from .79 to .89, indicating excellent internal consistency .

Barratt Impulsiveness Scale (BIS-11) The BIS-11 (Patton et al., 1995; Stanford et al., 2009) is a 30-item self-report measure assessing three dimensions of impulsivity. Items are rated on a 4-point Likert scale (1 = Rarely/Never to 4 = Almost Always/Always). Higher scores indicate greater impulsivity. In the present sample, Cronbach's α was .83 for the total scale, .79 for attentional impulsivity, .81 for motor impulsivity, and .80 for non-planning impulsivity .

Short-Form of the Coolidge Axis II Inventory (SCATI)

The SCATI (Coolidge et al., 2010) is a 70-item self-report measure assessing all 10 DSM-5 PDs. For this study, we used cluster scores:

- **Cluster A:** Paranoid, Schizoid, Schizotypal (15 items)
- **Cluster B:** Antisocial, Borderline, Histrionic, Narcissistic (20 items)
- **Cluster C:** Avoidant, Dependent, Obsessive-Compulsive (15 items)

Items are rated on a 4-point Likert scale (1 = *strongly false* to 4 = *strongly true*). Higher scores indicate greater endorsement of PD traits. In the present sample, Cronbach's α was .88 for the total scale, with cluster alphas of .79 (Cluster A), .85 (Cluster B), and .81 (Cluster C).

Procedure Data collection occurred over three months (January–March 2018). Following departmental approval, research assistants visited classrooms to explain the study and distribute information sheets. Eligible students provided written informed consent; parental consent was obtained for participants under 18 years (n = 112, 30.6%).Questionnaires were administered in paper-and-pencil format during class hours in groups of 20–40 students. To minimise order effects, three counterbalanced sequences were used. Completion time ranged from 25 to 35 minutes. Participants were debriefed upon completion, and mental health resources were provided.Data were double-entered into SPSS; missing data (<1%) were handled using listwise deletion.

Analyses were conducted using SPSS Version 25 and PROCESS Macro Version 4.0 (Hayes, 2018). Descriptive statistics (means, standard deviations, ranges, skewness, kurtosis) were computed by gender. Normality was assessed with skewness and kurtosis values within ±2 (George & Mallery, 2019). Internal consistency was evaluated using Cronbach's α. Common method bias was assessed via Harman's single-factor test (Podsakoff et al., 2003).

Primary Analyses includes Independent-samples t-tests compared males and females on DERS, BIS-11, and SCATI scores. Cohen's d effect sizes were computed (0.20 = small, 0.50 = medium, 0.80 = large).Moderation analyses used PROCESS Model 1 with 5,000 bootstrap resamples. Predictor and moderator variables were mean-centred prior to computing interaction terms.Moderated mediation was tested using PROCESS Model 7 with 5,000 bootstrap resamples, specifying ED as the predictor, impulsivity as the mediator, PD traits as the outcome, and gender as the moderator of the a-path. The index of moderated mediation was computed to test for significant gender differences in the indirect effect (Hayes, 2018).Statistical significance was set at $p < .05$ (two-tailed). Exact p-values and confidence intervals are reported, consistent with APA 7th recommendations (Appelbaum et al., 2018).

Results

Descriptive Statistics and Normality by Gender

All variables demonstrated skewness and kurtosis values within acceptable ranges (±2) for both males and females, indicating approximately normal distribution (George & Mallery, 2019). Harman's single-factor test indicated that the first factor accounted for 18.7% of the total variance—well below the 50% threshold, suggesting that common method bias is unlikely to substantially affect the results (Podsakoff et al., 2003).

Table 1 ***Descriptive Statistics by Gender***

Variable	Male (n=183) M (SD)	Female (n=183) M (SD)
DERS Total	98.82 (18.92)	103.38 (19.15)
Non-acceptance	15.23 (5.12)	17.89 (5.43)
Goal-directed difficulties	14.89 (4.56)	15.12 (4.78)

Variable	Male (n=183) M (SD)	Female (n=183) M (SD)
Impulse control difficulties	16.34 (5.23)	16.89 (5.41)
Lack of emotional awareness	18.45 (4.32)	16.23 (4.15)
Limited access to strategies	17.23 (5.67)	19.67 (5.89)
Lack of emotional clarity	16.68 (4.21)	17.58 (4.45)
BIS-11 Total	73.56 (8.89)	71.99 (8.73)
Attentional impulsivity	18.23 (4.12)	18.67 (4.13)
Motor impulsivity	23.89 (5.34)	21.45 (4.56)
Non-planning impulsivity	31.44 (5.78)	31.87 (6.05)
SCATI Total	158.34 (25.67)	164.22 (26.89)
Cluster A	38.45 (7.23)	35.89 (6.98)
Cluster B	40.23 (8.12)	45.67 (8.56)
Cluster C	36.78 (7.56)	37.12 (7.89)

Table 2 ***Gender Differences in Emotion Dysregulation, Impulsivity, and Personality Disorder Traits***

Variable	Male (n=183) M (SD)	Female (n=183) M (SD)	T	p	Cohen's d
DERS Total	98.82 (18.92)	103.38 (19.15)	-2.31	.02	0.31
Non-acceptance	15.23 (5.12)	17.89 (5.43)	-4.12	<.001	0.42

Variable	Male (n=183) M (SD)	Female (n=183) M (SD)	T	p	Cohen's d
Goal-directed difficulties	14.89 (4.56)	15.12 (4.78)	-0.48	.63	0.05
Impulse control difficulties	16.34 (5.23)	16.89 (5.41)	-0.99	.32	0.10
Lack of emotional awareness	18.45 (4.32)	16.23 (4.15)	4.56	.003	0.38
Limited access to strategies	17.23 (5.67)	19.67 (5.89)	-3.21	.01	0.35
Lack of emotional clarity	16.68 (4.21)	17.58 (4.45)	-1.98	.05	0.21
BIS-11 Total	73.56 (8.89)	71.99 (8.73)	1.69	.09	0.18
Attentional impulsivity	18.23 (4.12)	18.67 (4.13)	-1.02	.31	0.11
Motor impulsivity	23.89 (5.34)	21.45 (4.56)	4.67	<.001	0.49
Non-planning impulsivity	31.44 (5.78)	31.87 (6.05)	-0.69	.49	0.07
SCATI Total	158.34 (25.67)	164.22 (26.89)	-2.12	.04	0.22
Cluster A	38.45 (7.23)	35.89 (6.98)	3.12	.03	0.29
Cluster B	40.23 (8.12)	45.67 (8.56)	-5.23	<.001	0.44
Cluster C	36.78 (7.56)	37.12 (7.89)	-0.42	.67	0.04

Note: Bolded values indicate significant gender differences with moderate effect sizes.

Hypothesis 1 was partially supported. Females scored significantly higher than males on DERS total ($d = 0.31$, $p = .02$), non-acceptance of emotional responses ($d = 0.42$, $p < .001$), and limited access to strategies ($d = 0.35$, $p = .01$). However, females did not score significantly higher on impulse control difficulties ($d = 0.10$, $p = .32$), goal-directed difficulties ($d = 0.05$, $p = .63$), or lack of emotional clarity

(d = 0.21, p = .05). Females also scored significantly higher on Cluster B traits (d = 0.44, p < .001). Hypothesis 2 was supported. Males scored significantly higher than females on lack of emotional awareness (d = 0.38, p = .003), Cluster A traits (d = 0.29, p = .03), and motor impulsivity (d = 0.49, p < .001). Hypothesis 3 was supported. No significant gender differences emerged for Cluster C traits (d = 0.04, p = .67). Hypothesis 4: Gender as Moderator of the ED-PD Relationship

Table 3 ***Moderation Analysis – Gender as Moderator of ED → Total PD Traits***

Predictor	**B**	**SE**	**T**	**p**	**95% CI**
Constant	98.45	4.23	23.27	< .001	[90.12, 106.78]
ED (DERS total)	0.89	0.12	7.42	< .001	[0.65, 1.13]
Gender (0=male, 1=female)	5.23	3.45	1.52	.13	[-1.56, 12.02]
ED × Gender	-0.12	0.09	-1.34	.18	[-0.29, 0.05]

Note: N = 366. Interaction term tests whether the ED-PD slope differs by gender.

The ED × Gender interaction term was not significant (B = -0.12, p = .18, 95% CI [-0.29, 0.05]). This indicates that gender does not moderate the ED-PD relationship—that is, ED predicts PD traits equally strongly for males and females. Hypothesis 4 was supported.

Table 4 ***Cluster-Specific Moderation – Gender as Moderator of ED → PD Clusters***

Outcome	**Interaction B**	**SE**	**T**	**P**	**95% CI**	**Simple Slopes Male**	**Simple Slopes Female**
Cluster A	-0.05	0.06	-0.83	.41	[-0.17, 0.07]	B = 0.34***	B = 0.29***
Cluster B	-0.14	0.08	-1.75	.08	[-0.30, 0.02]	B = 0.42***	B = 0.28***
Cluster C	-0.08	0.06	-1.33	.18	[-0.20, 0.04]	B = 0.38***	B = 0.30***

*Note: N = 366. **$p < .001$. None of the interaction terms were significant.*

Gender did not moderate the ED-PD relationship for any of the clusters. The ED-PD slopes were significant and comparable for males and females across all clusters.

Table 5 ***Moderation Analysis – Gender as Moderator of Impulsivity → Total PD Traits***

Predictor	B	SE	T	p	95% CI
Constant	98.56	4.56	21.61	< .001	[89.59, 107.53]
Impulsivity (BIS-11 total)	0.67	0.11	6.09	< .001	[0.45, 0.89]
Gender (0=male, 1=female)	4.89	3.67	1.33	.18	[-2.34, 12.12]
Impulsivity × Gender	0.08	0.08	0.95	.34	[-0.08, 0.24]

Note: N = 366. Interaction term tests whether the impulsivity-PD slope differs by gender.

The Impulsivity × Gender interaction term was not significant (B = 0.08, p = .34, 95% CI [-0.08, 0.24]). This indicates that gender does not moderate the impulsivity-PD relationship—that is, impulsivity predicts PD traits equally strongly for males and females. Hypothesis 5 was supported.

Table 6 ***Cluster-Specific Moderation – Gender as Moderator of Impulsivity → PD Clusters***

Outcome	Interaction B	SE	T	P	95% CI	Simple Slopes Male	Simple Slopes Female
Cluster A	0.03	0.05	0.60	.55	[-0.07, 0.13]	B = 0.28***	B = 0.31***
Cluster B	0.10	0.07	1.43	.15	[-0.04, 0.24]	B = 0.35***	B = 0.45***
Cluster C	0.06	0.05	1.20	.23	[-0.04, 0.16]	B = 0.30***	B = 0.36***

*Note: N = 366. ***p < .001. None of the interaction terms were significant.*

Gender did not moderate the impulsivity-PD relationship for any of the clusters. The impulsivity-PD slopes were significant and comparable for males and females across all clusters.

To test whether impulsivity mediates the ED-PD relationship differently for males and females, we conducted moderated mediation analysis using PROCESS Model 7.

Table 7 ***Moderated Mediation Analysis – Impulsivity as Mediator of ED-PD Relationship, Moderated by Gender***

Path	Male	Female	Difference (Male - Female)
a-path (ED → Impulsivity)	0.23**	0.34**	-0.11
b-path (Impulsivity → PD, controlling for ED)	0.35**	0.33**	0.02
c'-path (ED → PD, controlling for impulsivity)	0.32**	0.31**	0.01
Indirect effect (a×b)	0.086	0.112	-0.026
95% CI for indirect effect	[0.041, 0.135]	[0.062, 0.165]	—
Proportion mediated	21.2%	26.5%	-5.3%

*Note: **p < .01. Bootstrap samples = 5,000. CI = bias-corrected confidence interval.*

Index of Moderated Mediation = -0.026, SE = 0.033, 95% CI [-0.089, 0.041]

The index of moderated mediation was not significant (index = -0.026, SE = 0.033, 95% CI [-0.089, 0.041]), indicating that the indirect effect (ED → Impulsivity → PD) does not differ significantly by gender. Although females showed a slightly larger indirect effect (0.112) than males (0.086), this difference was not statistically significant. Hypothesis 6 was supported**.**

Discussion

The present study examined gender differences in emotion dysregulation, impulsivity, and personality disorder traits within a Pakistani university sample, while also investigating whether gender moderates the relationships among these constructs and whether impulsivity mediates the ED-PD pathway differently for males and females. Six principal findings emerged from this investigation.

First, females demonstrated significantly higher scores on overall emotion dysregulation, non-acceptance of emotional responses, and limited access to effective regulation strategies. These findings align with established literature documenting that females typically report greater difficulties with emotional regulation, particularly regarding emotional acceptance and strategy accessibility (Nolen-Hoeksema, 2012; Weinberg & Klonsky, 2009). The observed pattern suggests that females may experience more pronounced challenges in accepting their emotional experiences and may have fewer perceived regulatory resources at their disposal when confronting emotional distress.

Second, males exhibited significantly higher scores on lack of emotional awareness and motor impulsivity. The elevated lack of emotional awareness among males is consistent with alexithymia research, which consistently demonstrates that males experience greater difficulty identifying and

articulating emotional states (Levant et al., 2009; Salminen et al., 1999). This pattern likely reflects differential socialisation practices wherein males are discouraged from attending to and expressing emotional experiences. Concurrently, the heightened motor impulsivity observed in males aligns with research indicating that males engage more frequently in overt impulsive behaviours (Patton et al., 1995; Stanford et al., 2009), potentially attributable to both biological factors, such as hormonal influences, and socialisation processes that tolerate risk-taking and aggression in males.

Third, females scored significantly higher on Cluster B personality traits, whereas males scored significantly higher on Cluster A traits. This gendered pattern mirrors established epidemiological findings from Western populations, wherein females are disproportionately represented among borderline and histrionic personality disorders, while males show elevated prevalence in schizoid and paranoid personality disorders (Grant et al., 2008; Lenzenweger et al., 2007). The moderate effect sizes observed ($d = 0.44$ for Cluster B, $d = 0.29$ for Cluster A) are comparable to those reported in community-based epidemiological studies, suggesting cross-cultural consistency in these gender differences.

Fourth, no significant gender differences emerged for Cluster C traits, a finding consistent with research indicating more balanced gender distributions for avoidant, dependent, and obsessive-compulsive personality disorders (Lenzenweger et al., 2007; Torgersen et al., 2001). This absence of gender disparity suggests that anxious and fearful personality patterns may be relatively equally distributed across genders.

Fifth, gender did not moderate either the ED-PD relationship or the impulsivity-PD relationship. This represents a particularly important negative finding, indicating that despite mean-level differences between males and females on these constructs, the predictive strength of emotion dysregulation and impulsivity for personality disorder traits remains equivalent across genders. This supports the invariance hypothesis and suggests that the mechanisms linking these transdiagnostic risk factors to personality pathology operate uniformly regardless of biological sex (Beauchaine & Cicchetti, 2019).

Sixth, impulsivity partially mediated the ED-PD relationship for both genders. While the indirect effect was slightly larger for females (0.112) compared to males (0.086), this difference was not statistically significant, as evidenced by the non-significant index of moderated mediation. This suggests that the pathway from emotion dysregulation through impulsivity to personality disorder traits represents a general mechanism that operates similarly for males and females, reinforcing transdiagnostic conceptualisations of these processes.

Integration with Prior Literature

The present findings contribute to the existing literature in several meaningful ways. The observed gender differences in personality disorder cluster endorsement align closely with epidemiological research conducted in Western populations, suggesting that these patterns may reflect universal rather than culturally specific phenomena. The moderate effect sizes observed for Cluster B and Cluster A traits are consistent with community-based prevalence studies, reinforcing the robustness of these gender differences across diverse populations (Grant et al., 2008; Lenzenweger et al., 2007).Regarding emotion dysregulation, the current findings corroborate extensive research demonstrating that females report greater difficulties with emotional regulation, particularly in accepting emotional experiences and accessing effective regulatory strategies (Nolen-Hoeksema, 2012; Weinberg & Klonsky, 2009). The elevated lack of emotional awareness observed in males aligns with alexithymia research, which consistently documents greater difficulty identifying and describing emotions among males (Levant et al., 2009; Salminen et al., 1999). This pattern likely reflects differential emotional socialisation practices, wherein females are encouraged to develop emotional vocabulary and attend to emotional experiences, while males are discouraged from emotional expression and may develop avoidant patterns that generalise to reduced emotional awareness (Brody & Hall, 2008).

The heightened motor impulsivity observed in males is consistent with research demonstrating that males engage more frequently in overt impulsive behaviours (Patton et al., 1995; Stanford et al., 2009). This pattern may reflect both biological influences, including hormonal factors such as testosterone, and socialisation processes that permit greater tolerance for risk-taking and aggression in males. The absence of gender differences in attentional and non-planning impulsivity is also consistent with the mixed findings reported in the existing literature (Stanford et al., 2009), suggesting that impulsivity subtypes may show differential gender patterns.

The finding that gender does not moderate the ED-PD or impulsivity-PD relationships represents an important contribution to the literature. While mean levels of emotion dysregulation, impulsivity, and personality disorder traits differ significantly between males and females, the relationships among these variables remain invariant across gender. This indicates that emotion dysregulation is equally pathogenic for males and females, and impulsivity is equally predictive of personality disorder traits regardless of biological sex. These findings support transdiagnostic conceptualisations of emotion dysregulation and impulsivity as general risk factors for psychopathology (Beauchaine & Cicchetti, 2019; Sloan et al., 2017) and suggest that interventions targeting these mechanisms should be equally effective for both genders.

The present findings align with studies reporting no gender moderation (Weiss et al., 2013) while contrasting with research demonstrating gender-specific effects (Nolen-Hoeksema, 2012). The absence of moderation observed here may be attributable to the non-clinical nature of the sample, the specific measures employed, or the developmental stage of participants during late adolescence. Future research should examine gender moderation patterns in clinical populations and across different developmental periods to clarify the generalisability of these findings.

The moderated mediation findings indicate that the ED → Impulsivity → PD pathway functions as a general mechanism across genders. This is consistent with the emotional cascade model (Selby et al., 2009) and negative urgency theory (Cyders & Smith, 2008), both of which propose that impulsivity emerges as a consequence of emotion dysregulation and subsequently contributes to psychopathology. The slightly larger indirect effect observed for females may reflect their elevated emotion dysregulation levels, but the non-significant difference suggests that the underlying mechanism operates uniformly across genders.

Theoretical Implications

These findings carry several important theoretical implications. First, the observed gender differences are consistent with socialisation theories of gender and emotion. Differential socialisation practices—wherein females are encouraged to be emotionally expressive and relationship-focused while males are socialised toward emotional restraint and independence—may contribute to the observed gender differences in emotion dysregulation and personality disorder traits (Brody & Hall, 2008). However, the gender-invariance of the relationships among these variables suggests that while socialisation shapes mean-level differences, it does not alter the fundamental mechanisms linking emotion dysregulation and impulsivity to personality pathology.

Second, the findings support transdiagnostic models positioning emotion dysregulation and impulsivity as general risk factors for psychopathology (Beauchaine & Cicchetti, 2019; Sloan et al., 2017). The gender-invariance of these relationships suggests that clinicians should assess emotion dysregulation and impulsivity in all patients regardless of gender, rather than assuming these factors are more relevant for one gender than the other. This has significant implications for both assessment and intervention approaches.

Third, the mediation findings provide support for the emotional cascade model (Selby et al., 2009) across both genders. The model proposes that intense negative affect triggers rumination, which

amplifies distress to intolerable levels and ultimately leads to impulsive behaviours as desperate attempts to escape. The present findings suggest that this cascade operates similarly for males and females, supporting the model's generalisability across genders.

Fourth, the mediation findings are consistent with negative urgency theory (Cyders & Smith, 2008), which proposes that the tendency to act impulsively when experiencing negative emotions represents a key pathway linking emotion dysregulation to psychopathology. The present findings extend this theoretical framework to both genders, suggesting that negative urgency functions as a general mechanism across gender.

Fifth, the most important theoretical implication concerns the gender-invariance of the mechanisms linking emotion dysregulation and impulsivity to personality disorder traits. While mean levels of these constructs differ significantly between males and females, the pathways among them remain invariant. This suggests that the fundamental processes underlying personality pathology are consistent across genders, even though the expression of pathology may differ. This insight has profound implications for understanding the aetiology and maintenance of personality disorders.

Cultural Contextualisation

The present findings must be interpreted within the Pakistani cultural context, where traditional gender role expectations are prominent. Males are socialised to be strong, independent, and emotionally restrained, while females are expected to be nurturing, emotionally expressive, and relationship-focused (Ali & Yousaf, 2022; Anwar et al., 2024). These role expectations likely contribute to the observed gender differences in emotion dysregulation, impulsivity, and personality disorder traits.

Emotional expression norms in Pakistan are differentially socialised by gender, with males expected to suppress vulnerable emotions such as sadness, fear, and shame, while females may be permitted to express certain emotions but not anger (Matsumoto & Hwang, 2012). This gendered socialisation likely contributes to males' elevated lack of emotional awareness and females' heightened emotion dysregulation. The finding that males exhibit lower emotional awareness may reflect cultural norms that discourage males from attending to and processing emotional experiences, potentially leading to habits of emotional avoidance that persist into adulthood.

Mental health stigma is pronounced in Pakistan, and this stigma may be particularly acute for males (Khalily, 2011). Males may be less willing to acknowledge emotional difficulties or seek professional help, contributing to underreporting of emotion dysregulation and personality disorder traits. This may also contribute to males' tendency to rely on suppression as a primary emotion regulation strategy, potentially explaining their lower emotional awareness and heightened motor impulsivity.

The collectivist nature of Pakistani society emphasises family honour and social harmony, with behaviours that disrupt family harmony—including emotional expression and help-seeking—strongly discouraged. This may be particularly relevant for females, who face greater pressure to maintain family honour through emotional restraint. This may contribute to females' elevated emotion dysregulation and Cluster B traits, as internalising distress may represent the only culturally acceptable way to express emotional difficulties.

Recent Pakistani research has confirmed that cultural norms of emotional suppression contribute significantly to internalised distress and maladaptive coping among university students (Anwar et al., 2024). Gender differences in these patterns have also been documented, with females showing higher internalising distress and males showing higher externalising behaviours. These findings support the cultural relevance of the present results and highlight the importance of considering cultural context when interpreting gender differences in mental health constructs.

Clinical Implications

The present findings carry several important implications for clinical assessment and intervention. Regarding assessment, clinicians should be aware of gender differences in emotion dysregulation and personality disorder presentations. Females may be more likely to present with emotion dysregulation and Cluster B traits, while males may be more likely to present with lack of emotional awareness and Cluster A traits. However, clinicians should avoid assuming that emotion dysregulation and Cluster B traits are only relevant to females; these constructs are equally important for males and should be assessed regardless of gender.

Given that males scored higher on lack of emotional awareness, clinicians should specifically assess emotional awareness in male patients. Measures such as the Toronto Alexithymia Scale-20 (Bagby et al., 1994) or the DERS lack of awareness subscale (Gratz & Roemer, 2004) may be useful clinical tools. Clinical interviews should include specific questions about emotional recognition, labelling, and expression, with particular attention to the possibility that male patients may underreport emotional difficulties due to social desirability concerns.

Given that males scored higher on motor impulsivity, clinicians should assess motor impulsivity in male patients using measures such as the BIS-11 motor impulsivity subscale (Patton et al., 1995). Clinical interviews should include questions about acting without thinking, impatience, and rash action, as these behavioural patterns may be particularly relevant for male patients and may contribute to personality pathology.

Given that females scored higher on overall emotion dysregulation, non-acceptance, and limited strategies, clinicians should assess these dimensions in female patients using the DERS (Gratz & Roemer, 2004). Clinical interviews should include questions about accepting emotions and accessing effective regulation strategies, as these may represent specific treatment targets for female patients.

Clinicians should also be aware of gender differences in personality disorder cluster endorsements. Females may be more likely to present with Cluster B traits, while males may be more likely to present with Cluster A traits. However, clinicians should avoid relying on gender stereotypes in diagnostic formulations; all personality disorder traits should be assessed regardless of gender, and individual presentations should be considered within their unique contextual framework.

Regarding intervention, the finding that emotion dysregulation predicts personality disorder traits equally strongly for males and females suggests that interventions targeting emotion dysregulation should be offered to both genders. Dialectical Behaviour Therapy skills training (Linehan, 2015) and other emotion regulation interventions should not be gender-specific but should be accessible to all patients regardless of gender.

Given that males scored higher on lack of emotional awareness, interventions for males should include emotional awareness training. This could incorporate mindfulness of emotions, body scan techniques, emotion tracking, and emotion vocabulary expansion (Lynch, 2018). Such interventions may be particularly beneficial for male patients who may have limited emotional vocabulary or difficulty identifying and articulating emotional experiences.

Given that males scored higher on motor impulsivity, interventions for males should include impulse control training. This could incorporate behavioural chain analysis, stimulus control, distress tolerance skills, and competing response training (Linehan, 2015). These interventions may help male patients develop greater capacity for behavioural inhibition and self-regulation.

Given that females scored higher on non-acceptance and limited strategies, interventions for females should include validation, normalisation of emotional experiences, and building a repertoire of accessible regulation strategies (Linehan, 2015). These interventions may help female patients develop greater acceptance of emotional experiences and more diverse regulatory resources.

Interventions should be culturally adapted for the Pakistani context. This includes respecting cultural norms regarding emotional expression, providing culturally acceptable alternatives to suppression such as cognitive reappraisal, addressing stigma around mental health, and considering gender-specific norms and challenges. Cultural adaptation may enhance intervention effectiveness and engagement in this population.

The gender-invariance of the ED-PD and impulsivity-PD relationships suggests that prevention programs targeting emotion dysregulation and impulsivity are likely to be effective for both genders. This supports the implementation of universal emotion regulation skills training in educational settings, which may prevent the development of personality disorder traits in at-risk individuals.

Policy Implications

The present findings carry several implications for mental health policy. Universities should implement comprehensive mental health policies that include gender-sensitive screening for emotion dysregulation, impulsivity, and personality disorder traits; provision of gender-sensitive interventions; destigmatisation of mental health difficulties for both genders; and cultural adaptation of services.

Emotion regulation and impulse control skills could be integrated into the educational curriculum for both genders. Skills training could include recognising and labelling emotions, cognitive reappraisal, distress tolerance, impulse control techniques, and emotional acceptance. Such integration may promote mental health literacy and prevent the development of personality pathology in young adults.

Policies should address mental health stigma, particularly for males who may be less willing to seek help. This could include public awareness campaigns, peer support programs, destigmatisation training, and accessible mental health services. Addressing stigma may improve help-seeking behaviour and reduce the burden of untreated mental health difficulties.

Mental health services should be culturally adapted for the Pakistani context. This includes respecting cultural norms regarding emotional expression, providing culturally acceptable alternatives to suppression, addressing stigma, and considering gender-specific norms and challenges. Cultural adaptation may improve service utilisation and treatment outcomes in this population.

Limitations

Several limitations warrant consideration when interpreting the present findings. The cross-sectional design precludes conclusions about causality. While the proposed models are theoretically derived, the data are correlational and cannot establish temporal precedence. Longitudinal studies are needed to examine whether gender differences in emotion dysregulation, impulsivity, and personality disorder traits are stable over time and whether the relationships among these variables are consistent across development.

The non-clinical sample represents another significant limitation. Participants were university students without diagnosed personality disorders, and findings may not generalise to clinical populations meeting full diagnostic criteria. Replication in clinical samples is essential to determine whether these patterns are amplified in populations with established personality pathology.

All measures were self-report, subject to response biases including social desirability, poor insight, and recall limitations. While the common method variance test suggested that bias was not excessive, multi-method assessment incorporating clinician ratings, behavioural measures, and physiological indices would strengthen future research.

The sample was restricted to late adolescence (17–19 years), and findings may not extend to other age groups. Gender differences may change across development, and research examining multiple developmental stages is needed to understand how these patterns evolve over time.

The sample was drawn from a single university in Pakistan, and findings may not generalise to other regions of Pakistan or to other countries with different cultural norms. Cross-cultural replication is needed to determine whether these findings are universal or culturally specific.

While we discussed cultural factors, the measures were developed primarily in Western samples, and cultural adaptation of measures is an ongoing need (Su et al., 2020). Future research should prioritise the development and validation of culturally adapted measures for Pakistani populations.

Gender was treated as a binary variable, which does not capture the full diversity of gender identity and expression. Future research should include non-binary and transgender individuals to understand the full spectrum of gender differences in emotion dysregulation, impulsivity, and personality disorder traits.

Future Directions

Several avenues for future research emerge from the present findings. Longitudinal studies should examine whether gender differences in emotion dysregulation, impulsivity, and personality disorder traits are stable over time and whether the relationships among these variables are consistent across development. Such studies would clarify the developmental trajectories of these constructs and identify critical periods for intervention.

Replication in clinical populations meeting full diagnostic criteria for personality disorders is essential. Comparison of non-clinical and clinical groups would clarify whether the patterns observed here are amplified in clinical populations and would provide insights into the mechanisms underlying personality pathology.

Multi-method assessment incorporating clinician-rated personality disorder assessments, behavioural measures of emotion dysregulation and impulsivity, and physiological measures of emotion regulation would strengthen future research and address the limitations of self-report measurement.

Systematic cross-cultural comparisons would clarify which findings are universal and which are culturally specific. Comparing Pakistani populations with Western and other non-Western populations would advance understanding of the role of culture in shaping gender differences in emotion dysregulation, impulsivity, and personality disorder traits.

Developmental studies examining gender differences across different developmental stages—childhood, adolescence, adulthood, and older age—would help identify when gender differences emerge and how they change over the lifespan. Such research would inform the timing of prevention and intervention efforts.

Future research should include non-binary and transgender individuals to understand the full spectrum of gender diversity in emotion dysregulation, impulsivity, and personality disorder traits. This would advance understanding of the mechanisms underlying gender differences and inform inclusive clinical practice.

Randomised controlled trials testing whether gender-sensitive interventions are more effective than universal interventions would inform clinical practice and guide resource allocation. Such studies would clarify whether interventions should be tailored to gender or whether universal approaches are sufficient.

Qualitative research exploring the lived experiences of males and females with emotion dysregulation, impulsivity, and personality disorder traits, particularly in the Pakistani cultural context, would provide rich contextual understanding and inform the development of culturally sensitive interventions.

Conclusions

This study examined gender differences in emotion dysregulation, impulsivity, and personality disorder traits in a Pakistani university sample. Females scored higher on ED (total, non-acceptance, limited strategies) and Cluster B traits. Males scored higher on lack of emotional awareness, motor impulsivity, and Cluster A traits. No gender differences emerged for Cluster C traits. These gender differences mirror Western clinical epidemiology and are consistent with socialisation theories of gender and emotion.However, gender did not moderate the ED-PD or impulsivity-PD relationships, and impulsivity mediated the ED-PD relationship equally for both genders. This suggests that while mean levels of ED, impulsivity, and PD traits differ by gender, the underlying mechanisms are gender-invariant (Beauchaine & Cicchetti, 2019). ED and impulsivity are equally important for males and females, even though the expression of pathology may differ.These findings have important implications for gender-sensitive assessment and intervention. Clinicians should be aware of gender differences in PD presentations but should not assume that ED and impulsivity are only relevant to one gender. Interventions targeting ED and impulsivity should be offered to both genders, with gender-specific adaptations as needed. The findings also highlight the importance of addressing cultural norms and stigma in the Pakistani context (Khalily, 2011; Matsumoto & Hwang, 2012).

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