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Comparison of Negative Affect and Anxiety–Depression Comorbidity among Mothers of Adolescents with Bipolar Disorder, Borderline Personality Disorder, and Healthy Adolescents

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A B S T R A C T

Purpose: The present study aimed to compare levels of negative affect and anxiety–depression comorbidity among mothers of adolescents with bipolar disorder, borderline personality disorder, and healthy adolescents.

Methods and Materials: This cross-sectional, descriptive–comparative study was conducted among mothers in Shiraz between July and September 2023. 58 participants were selected through purposive sampling. Negative affect was assessed using the Positive and Negative Affect Schedule (PANAS), and anxiety, depression, and stress were measured using the Depression Anxiety Stress Scale (DASS-21). Group differences were examined using one-way analysis of variance (ANOVA), with statistical analyses performed in SPSS version 27 at a significance level of 0.05.

Findings: No significant differences were observed between mothers of adolescents with bipolar disorder and those with borderline personality disorder in negative affect ($p = 0.940$) or anxiety ($p = 0.584$). However, both clinical groups scored significantly higher than mothers of healthy adolescents ($p < 0.001$). Stress levels differed significantly between the bipolar and borderline groups ($p < 0.001$), with both groups reporting higher stress compared to mothers of healthy adolescents.

Conclusion: The findings suggest that having an adolescent with bipolar or borderline disorder is associated with heightened negative affect, anxiety, and stress among mothers. These results highlight the importance of providing targeted psychological and supportive interventions to promote the well-being of mothers caring for adolescents with severe mental health conditions.

Keywords: *Negative affect, Anxiety–depression comorbidity, Bipolar disorder, Borderline personality disorder, Mothers of adolescents*

1. Introduction

The mental well-being of mothers is significant in the emotional growth of adolescents , especially when dealing with complex disorders like bipolar or borderline, which can impact the family's overall happiness due to the intricate nature and various repercussions of these conditions (Amirfaryar et al., 2020; Islam et al., 2025; Yan & Abdullah, 2025). Bipolar disorder (BD) is a prevalent psychiatric disorder among adolescents , characterized by frequent mood swings, hypomania, depression, and a decline in quality of life along with an increased risk of suicide (Seshadhri et al., 2024). Similarly, borderline personality disorder (BPD) is known for emotional instability, mood swings, interpersonal problems, and a higher likelihood of self-harm and destructive behaviors in adolescents , creating significant psychological and social pressures for families, particularly mothers (Dunn et al., 2020). Research indicates that family environment dynamics, including parental behaviors, play a crucial role in the development and severity of these disorders. Negative behaviors such as harsh discipline, emotional neglect, and disregarding the needs of adolescents can worsen symptoms of these disorders in children (Li, 2024). Additionally, studies have demonstrated a direct correlation between parental relationship issues and borderline traits in adolescents , as well as the development of anxiety and depression in them (Kerr et al., 2021).

The caretakers of individuals with BPD and BD play a crucial role in managing the behavior and recovery of these patients. However, these responsibilities come with intense physical, psychological, and social stresses that impact family dynamics, disrupt emotional connections and communication, and give rise to emotions such as anger, guilt, and sadness, resulting in negative affect (NA) (Meshkinyazd et al., 2020). Negative affect syndrome (NAS) encompasses feelings of emotional distress, including anxiety, sadness, fear, anger, guilt, shame, irritability, and other unpleasant emotions (Stringer, 2020). A study revealed that children's behavioral issues and parental psychological demands are common indicators of parental mental well-being (Chen et al., 2020). Another study found that caregivers of individuals with BPD face significant challenges like psychological and emotional pressures, as well as feelings of shame or societal judgment, leading to internal conflicts and a decrease in quality of life (Meshkinyazd et al., 2020).

Caregivers of individuals with severe emotional and behavioral disorders experience higher levels of psychological burden and distress compared to those who are not caregivers. Mothers of adolescents with BD or BPD face significant stress, guilt, and psychological tension. Additionally, there is a high prevalence of comorbidity between anxiety and depression in mothers of these adolescents , indicating a negative interaction between these two disorders (Hayes et al., 2024). The term comorbidity refers to the coexistence of one or more disorders alongside an index disorder either simultaneously (concurrent comorbidity) or at different stages of life (cumulative comorbidity) (Saha et al., 2021). The co-occurrence of depression and anxiety disorders is common and is often associated with increased severity, duration, and impact on daily functioning. Having one disorder increases the risk of developing the other, and symptoms of depression and anxiety can predict each other over the course of weeks and months (Groen et al., 2020).

Research findings indicate that parents of individuals with BPD experience more symptoms of depression and anxiety and have a lower quality of life compared to individuals without family members with the disorder (Guillén et al., 2023). According to Fonseca-Baeza et al. (2023), family members of individuals with BPD face a significant burden, which negatively affects their quality of life and contributes to higher levels of depression, anxiety, and stress (Fonseca-Baeza et al., 2023). Another study found that first-degree relatives of individuals with BPD are at a higher risk of developing emotional disorders (Lins-Silva et al., 2024). Additionally, a study revealed that parents with BD and their partners exhibit elevated levels of mental health issues, maladaptive personality traits, and psychosocial difficulties, along with increased neuroticism (Serravalle et al., 2020).

Mothers of adolescents diagnosed with BD and BPD encounter various psychological and social challenges. These disorders not only impact the well-being of adolescents but also place a significant psychological burden and stress on their mothers. Thus, the examination of NA and the comorbidity of anxiety and depression in mothers is crucial for their mental health, given the intricate connections of these disorders with biological, psychological, and environmental factors. Despite the significance of this issue, most studies have mainly focused on adolescents with bipolar and borderline disorders, neglecting the impact on mothers who are the primary caregivers. There is a research gap in this area, with few studies comparing NA and the comorbidity of anxiety and depression in mothers of adolescents with these two

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disorders. This study is one of the first to address this gap by analyzing the levels of NA and the comorbidity of anxiety and depression in mothers of adolescents diagnosed with BD and BPD. The goal is to compare the prevalence and seriousness of these emotional states in these mothers and enhance understanding of the adverse effects of teenager mental disorders on parental mental health.

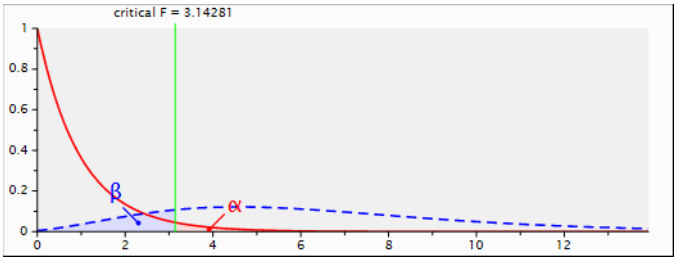
2. Methods and Materials

2.1. Study Design and Participants

This study adopted a cross-sectional, descriptive–comparative design. The statistical population of the study was comprised of all mothers of healthy adolescents and with bipolar and borderline disorder residing in Shiraz between July and September 2023, who had sought help from counseling clinics in Shiraz. The sampling method utilized in the study was purposive. The sample size for the study was 60 individuals (20 individuals in each group). The adequacy of the sample size was determined using G-Power software, taking into account α= 0.05, effect size= 0.40, power test= 0.80, and Number of groups=3 (Kang, 2021).

Figure 1

Sample size calculation with G-Power software



Accordingly, each group consisted of 28 individuals. To account for potential sample size reduction, the researcher decided to include 30 individuals in each group for the study. The inclusion criteria entailed participants being between 20 and 45 years old, having a child with bipolar or borderline disorder, being willing to take part in the study, and possessing sufficient literacy and comprehension skills to respond to questions. On the contrary, the exclusion criteria encompassed individuals who did not complete the questionnaire with more than seven questions, had any physical or mental condition hindering their participation, or declined to partake in the study. Following the necessary approvals for conducting the study and university authorization, the researchers initially contacted four psychology and counseling clinics that specialized in treating bipolar and borderline disorder cases. These clinics were selected due to the potential for collaboration. Subsequently, the researcher introduced the research method and objectives to the clinic management, and upon receiving preliminary approval, compiled a list of eligible participants from the clinic's client base, specifically those who had sought treatment for bipolar or borderline disorder in the past two months and met the study's requirements. The eligible individuals were contacted via phone and invited to join the study. They were briefed on the research objectives and ethical guidelines, and any queries were addressed. Subsequently, written consent was obtained from them through a questionnaire gauging their satisfaction with participating in the study. The researchers proceeded to measure the variables using the designated research instruments. The mothers in the control group were chosen at random from those who had visited the clinics but did not have children with bipolar or borderline disorder. They had come for other reasons. It took approximately 70 hours to conduct the research and complete the questionnaires. The researcher carried out the study over a period of 35 days spanning three months. A total of 12 mothers of bipolar children, 13 mothers of borderline children, and 7 mothers of healthy children were excluded from the study due to incomplete or intentionally erroneous questionnaire responses. Before distributing the questionnaires, participants were asked to sign a consent form to adhere to ethical guidelines. Taking part in the research was optional, and participants had the choice to leave at any time. It was emphasized that the questionnaires did not contain any identifying information.

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2.2. *Measures*

Positive and negative affect scales (PANAS): In 1988, Watson and colleagues developed the Positive-Negative Affect Scale (PANAS) for assessing positive and negative feelings and emotions (Watson et al., 1988). It consists of a 20-item scale with two subscales - positive and negative - each with ten questions. Responses are measured on a 5-point Likert scale ranging from "not at all = 1" to "very much = 5". In a survey conducted in Iran, the Cronbach's alpha coefficient for the PANAS was found to be 0.86 (Karbasian et al., 2023). In the current study, the researcher calculated the Cronbach's alpha coefficient for the scale to be 0.71.

Depression anxiety stress scale (DASS 21): The Lovibond and Lovibond scale was created in 1995 to evaluate depression, anxiety, and stress (Lovibond, 1995). Originally consisting of 46 questions, it was later condensed to 21 questions. This 21-question scale includes three subcategories: depression, anxiety, and stress, each with 7 items rated on a 4-point Likert scale (0 to 3). In an Iranian study, the Cronbach's alpha coefficient for this questionnaire ranged from 0.88 to 0.89 (Besharat et al., 2015) . In this study, the researcher determined Cronbach's alpha values of 0.77, 0.69, and 0.76 for depression, anxiety, and stress, respectively, using this particular measurement tool.

2.3. *Data Analysis*

Descriptive statistics were computed for all variables. Assumptions of normality were assessed using the Kolmogorov–Smirnov test, and homogeneity of variances was examined using Levene's test. One-way ANOVA was applied to compare group means, and Welch's test was used when variance homogeneity was violated. Effect sizes were reported using partial eta squared (η^2p). Analyses were conducted using SPSS version 27.

3. Findings and Results

Demographic characteristics differed significantly across groups with respect to age and educational level ($p < 0.05$), while no significant differences were observed in the number of children ($p = 0.712$).

Table 1

Demographic characteristics

Demographic information		Mothers of adolescents with bipolar disorder	%	Mothers of adolescents with borderline disorder	%	Mothers of healthy adolescents	%	Kruskal-Wallis Test	P value
Age	20 to 30 years	3	16.7%	2	11.8%	3	13.0%	6.473	0.039
	31 to 40 years	3	16.7%	9	52.9%	1	4.3%		
	40 to 45 years	12	66.7%	6	35.3%	19	82.6%		
Education	Diploma	4	22.2%	9	52.9%	7	30.4%	6.553	0.038
	Bachelor's degree	3	16.7%	5	29.4%	6	26.1%		
	Master's degree	11	61.1%	3	17.6%	10	43.5%		
Number of children	Only child	7	38.9%	4	23.5%	6	26.1%	0.678	0.712
	Two children	4	22.2%	5	29.4%	7	30.4%		
	More than one child	7	38.9%	8	47.1%	10	43.5%		

Table 2 displays the descriptive statistics about the research variables among the groups of mothers.

Table 2

Descriptive statistics of the variables

Variables	Groups	N	M±SD	Min	Max	Skewness	Kurtosis
NAS	Mothers of adolescents with bipolar disorder	18	29.222±2.130	24	33	0.210	-0.818
	Mothers of adolescents with borderline disorder	17	29.000±1.871				
	Mothers of healthy adolescents	23	26.391±1.877				
Depression	Mothers of adolescents with bipolar disorder	18	9.667±2.142	6	13	-0.168	-1.251

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	Mothers of adolescents with borderline disorder	17	10.765±2.016				
	Mothers of healthy adolescents	23	10.304±1.845				
Anxiety	Mothers of adolescents with bipolar disorder	18	15.000±1.138	10	16	-0.374	-0.957
	Mothers of adolescents with borderline disorder	17	14.529±1.663				
	Mothers of healthy adolescents	23	12.478±1.377				
Stress	Mothers of adolescents with bipolar disorder	18	15.000±0.840	10	16	-0.036	-0.625
	Mothers of adolescents with borderline disorder	17	13.235±1.562				
	Mothers of healthy adolescents	23	11.957±1.022				

According to Table 2, Descriptive statistics indicated higher mean levels of negative affect, anxiety, and stress among mothers of adolescents with bipolar and borderline disorders compared to mothers of healthy adolescents. Depression scores did not differ substantially across groups.

Table 3

ANOVA to check the difference between groups

Variables	Cases	SS	df	MS	F	p	η^2_p
NAS	Group	103.342	2	51.671	13.495	< .001	0.329
	Residuals	210.589	55	3.829	-	-	-
Depression	Group	10.692	2	5.346	1.349	0.268	0.047
	Residuals	217.928	55	3.962	-	-	-
Anxiety	Group	74.922	2	37.461	19.082	< .001	0.410
	Residuals	107.974	55	1.963	-	-	-
Stress (Welch)	Group	93.571	2.000	46.785	54.049	< .001	0.558
	Residuals	74.015	33.195	2.230	-	-	-

ANOVA results in Table 3 revealed significant group differences for negative affect ($F = 13.49$, $p < 0.001$, $\eta^2p = 0.329$), anxiety ($F = 19.08$, $p < 0.001$, $\eta^2p = 0.410$), and stress (Welch $F = 54.05$, $p < 0.001$, $\eta^2p = 0.558$). No significant differences were found for depression ($p = 0.268$).

Table 4

Post hoc comparisons - group

Variables	Group (I)	Group (J)	MD	95% CI for MD		SE	t	p
				Lower	Upper			
NAS	Mothers of adolescents with bipolar disorder	Mothers of adolescents with borderline disorder	0.222	-1.372	1.816	0.662	0.336	0.940
		Mothers of healthy adolescents	2.831	1.348	4.314	0.616	4.597	< .001
	Mothers of adolescents with borderline disorder	Mothers of healthy adolescents	2.609	1.101	4.116	0.626	4.168	< .001
Depression	Mothers of adolescents with bipolar disorder	Mothers of adolescents with borderline disorder	-1.098	-2.720	0.524	0.673	-1.631	0.241
		Mothers of healthy adolescents	-0.638	-2.147	0.871	0.626	-1.018	0.569
	Mothers of adolescents with borderline disorder	Mothers of healthy adolescents	0.460	-1.073	1.994	0.637	0.723	0.751
Anxiety	Mothers of adolescents with bipolar disorder	Mothers of adolescents with borderline disorder	0.471	-0.671	1.612	0.474	0.993	0.584
		Mothers of healthy adolescents	2.522	1.460	3.584	0.441	5.719	< .001

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	Mothers of adolescents with borderline disorder	Mothers of healthy adolescents	2.051	0.972	3.131	0.448	4.577	< .001
Stress	Mothers of adolescents with bipolar disorder	Mothers of adolescents with borderline disorder	1.765	0.820	2.710	0.392	4.498	< .001
		Mothers of healthy adolescents	3.043	2.164	3.923	0.365	8.337	< .001
	Mothers of adolescents with borderline disorder	Mothers of healthy adolescents	1.279	0.385	2.173	0.371	3.446	0.003

Based on Table 4, Post hoc comparisons showed no significant differences between mothers of adolescents with bipolar and borderline disorders in negative affect or anxiety. However, both groups differed significantly from mothers of healthy adolescents ($p < 0.001$). Stress levels were significantly higher among mothers of adolescents with bipolar disorder compared to those with borderline disorder ($p < 0.001$), and both clinical groups differed from the control group ($p < 0.001$).

4. Discussion and Conclusion

The primary objective of this research was to examine the differences in NA and the comorbidity of anxiety and depression among mothers of adolescents with bipolar and borderline disorders. The study findings revealed that although there was no significant variation in depression rates among the groups, mothers of adolescents with bipolar and borderline disorders exhibited higher levels of NAS, stress, and anxiety compared to mothers of healthy adolescents.

Regarding the findings of the present study, which showed that mothers of adolescents with bipolar and borderline disorders experience negative affect syndrome, stress, and anxiety more than mothers of healthy adolescents, it should be noted that this title is new and innovative, and so far no detailed study has been found that directly compares negative affect syndrome and the comorbidity of anxiety and depression in mothers of adolescents with bipolar and borderline disorders. However, the findings of this study are implicitly in line with studies that emphasize the impact of children's psychological disorders on the mental state of parents (Fonseca-Baeza et al., 2023; Guillén et al., 2023; Lins-Silva et al., 2024; Meshkinyazd et al., 2020; Serravalle et al., 2020).

A study noted the challenges faced by caregivers of individuals with borderline personality disorder (BPD), such as psychological and emotional pressures leading to feelings of shame and societal judgment. These difficulties may result in inner conflicts and a decrease in the overall well-being of those providing care (Meshkinyazd et al., 2020). Another study revealed that parents of individuals with BPD displayed higher levels of depressive and anxiety symptoms along with poorer quality of life compared to individuals without relatives affected by the disorder (Guillén et al., 2023). Fonseca-Baeza et al. (2023) demonstrated that family members of individuals with BPD experience high levels of burden, adversely impacting their quality of life and increasing levels of depression, anxiety, and stress (Fonseca-Baeza et al., 2023).

Furthermore, a study examining the prevalence of mental disorders among family members found that first-degree relatives of individuals with psychological disorders were more likely to develop emotional disorders (Lins-Silva et al., 2024). Another study noted that parents with BD and their partners tend to exhibit higher levels of mental illness, maladaptive personality traits, psychosocial problems, and neuroticism (Serravalle et al., 2020).

The lack of significant difference in depression between groups suggests that depression could be a common factor in mothers, influenced by factors like economic and social conditions or multiple parental roles rather than directly related to the child's disorder.

Anxiety and negative affect syndrome are more prevalent in mothers of adolescents with bipolar and borderline disorders due to heightened sensitivity to variables such as severity, complexity, and type of their child's mental disorder. Parents of adolescents with severe mental disorders like bipolar or borderline face ongoing psychological stress from their children's unstable behaviors, like mood swings or aggressive actions, which can lead to increased anxiety and stress if they feel incapable of managing or improving their child's situation (Dunn et al., 2020; Seshadhri et al., 2024). Bipolar and borderline disorders are correlated to emotional instability and risky behaviors, causing mothers to worry about their child's future and potentially decreasing their confidence as caregivers, exacerbating their feelings of helplessness and raising their anxiety and stress levels (Vasquez, 2022). These disorders typically lead to strained family relationships and

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more conflicts within the family, along with a lack of support from other family members or society, creating a cycle of stress and NA that not only affect the mother's mental well-being but also impact the child's behavior (Meshkinyazd et al., 2020; Zimmerman et al., 2021). Mothers may feel judged by society or seen as ineffective parents, reinforcing feelings of isolation, anxiety, and stress, and hindering their access to valuable support resources (Bedaso et al., 2021; Chen et al., 2020).The parental stress theory and the emotional conflict model can offer explanations for these findings, suggesting that constant contact with children with complex mental disorders can heighten NA in parents, potentially leading to reciprocal stress that impacts both the child and the parents psychologically (Wu & Xu, 2020).

Several limitations should be considered. The relatively small sample size and restriction to a single geographical region limit generalizability. The cross-sectional design precludes causal inference. The study focused exclusively on mothers, and future research should include fathers and examine gender differences in caregiving experiences. Disorder severity, treatment status, and caregivers' own mental health histories were not assessed. Reliance on self-report measures may introduce response bias. Future studies should employ longitudinal designs, larger samples, and multi-method assessments to provide a more comprehensive understanding.

The findings indicate that having an adolescent with bipolar or borderline personality disorder is associated with elevated negative affect, anxiety, and stress among mothers. These results emphasize the importance of integrating caregiver-focused psychological support into mental health services for adolescents with severe psychiatric disorders. Developing structured support programs may contribute to improved caregiver well-being and more adaptive family functioning.

Authors' Contributions

All authors contributed equally to the conception and design of the study, data collection and analysis, interpretation of the results, and drafting of the manuscript. Each author approved the final version of the manuscript for submission.

Declaration

During the preparation of this work the authors used GAPGPT in order to enhance the quality of the text by improving grammar, spelling, and clarity. They also used ChatGPT in order to assist with the translation of the original text from Persian into English. After using these tools, the authors reviewed and edited the content as needed and takes full responsibility for the content of the publication.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

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