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Research Paper

Role of Mothers' Personality Traits and Parenting Styles in Prediction of Behavioral Problems in Adolescent Girls with the Mediation of Family Emotional Climate

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ABSTRACT

Objective: This study aimed to investigate the influence of mothers' personality traits and parenting styles on behavioral problems in adolescent girls, mediated by the emotional climate of the family.

Methods: The sample consisted of 150 participants selected via multi-stage cluster random sampling from schools. Data were gathered using the Quay Revised Behavior Problem Checklist (RBPC), NEO Personality Inventory, Baumrind's Parenting Styles Questionnaire and Hillburn Family Emotional Climate Questionnaire. Analysis was performed using Smart PLS-3.

Results: Findings revealed that among personality traits, openness positively impacted family emotional climate, while the assertive parenting style also enhanced it. In contrast, the authoritarian style had a negative effect. Conscientiousness and extraversion negatively affected behavioral problems, while openness positively influenced them. Additionally, the family emotional climate negatively impacted behavioral issues. However, the indirect effect of personality traits and parenting styles on behavioral problems via family emotional climate was not significant.

Conclusion: These insights can aid in improving family emotional climate and addressing behavioral challenges in adolescent girls by focusing on mothers' personality traits and parenting approaches.

1. Introduction

Adolescent girls are at stage in life characterized by numerous physical, psychological, and social changes. These changes can present various psychological challenges (Nooripour et al., 2022). Adolescence is a critical period for girls as their personal and social identities are being shaped. The need for greater independence, coping with peer pressure, and adapting

to familial and societal expectations can all act as sources of stress. During this phase, adolescents may encounter psychological issues such as anxiety, depression, academic pressures, and body image concerns, all of which may lead to risky behaviors or, more broadly, behavioral problems (Hosseini & Nooripour, 2019). Behavioral problems result from

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the interaction between environmental stressors and individual sensitivities, and the roots of these problems can often be traced back to the nature of parent-child relationships. Parents, being the closest individuals to children during their formative years, have a profound influence on their behavior, and certain parental interactions may contribute to the development of behavioral problems (Pang et al., 2023). Evidence suggests that issues faced by children originate within the family. As children interact with their parents from the moment they are born and parents shape their emotions and thoughts in every aspect, it is evident that if parents face physical and mental challenges, they cannot serve as effective role models for them. Their offspring, consequently, will lead to numerous issues in their natural growth (Ahmadi et al., 2022; Nadi Yazdi et al., 2023).

In adolescents, behavioral problems typically manifest as aggression, school truancy, defiance, and other forms of antisocial behavior. These issues not only affect the quality of life for adolescents but can also disrupt family relationships, academic performance, and social interactions. Understanding and managing these behavioral problems requires identifying the contributing and underlying factors (Nooripour et al., 2023). Given the strong bond between adolescents and their mothers, it can be argued that one of the key factors influencing behavioral problems in adolescent girls is the personality traits of their mothers. Personality traits can broadly be defined as enduring patterns of thought, emotion, and behavior that reflect individual differences and are perceived as stable characteristics (Nooripour et al., 2023). One of the most comprehensive theories of personality is Costa and McCrae in 1992 Five-Factor Model, which refers to a hierarchical set of traits that represent individual differences across five broad and distinguishable domains, reflecting personal characteristics (McCrae & John, 1992).

Neuroticism refers to the degree of negative emotions an individual experiences; extraversion pertains to the extent to which a person seeks social engagement, positive emotions, and high levels of activity. Openness to experience reflects an individual's openness to creativity, new ideas, and diverse thoughts. Agreeableness signifies individual differences in cooperation and social harmony and is associated with tendencies toward growth, altruism, trust, and friendliness. Conscientiousness represents the will to achieve goals, self-control, perseverance, and dependability. Therefore, weaknesses in any positive traits and an increase in negative traits, such as neuroticism, can heighten an individual's anxiety sensitivity (Batool et al., 2023).

Overall, a mother's personality—such as the level of stress,

anxiety, depression, and parenting styles—can profoundly influence adolescent behavior and psychological states. Mothers struggling with psychological problems may not be able to provide the emotional support and guidance their children need, which can lead to the emergence or exacerbation of behavioral problems in adolescent girls. Thus, addressing and improving mothers' mental health is critical for preventing and managing behavioral problems in adolescent girls (Singh, 2023). In addition to maternal personality traits, a research conducted identified parenting styles as another factor influencing adolescent behavior. Parenting styles refer to a combination of attitudes, values, beliefs, and general approaches that parents use to raise and socialize their children, creating an emotional environment conducive to child development (Zhang & Wang, 2023). The three widely recognized parenting styles in psychology are authoritative, permissive, and authoritarian. Each style can have varying effects on adolescent behavior. For instance, authoritative parenting, a balance of warmth and appropriate control, typically leads to more positive behaviors and fewer behavioral problems in adolescents. Conversely, authoritarian parenting, characterized by rigid control without warmth, may result in increased aggressive behaviors and behavioral issues. Similarly, permissive parenting, which involves minimal control and supervision, can lead to behavioral problems such as defiance, indiscipline, and emotional regulation difficulties.

A key premise of Bowlby's attachment theory is that physical or emotional stressors automatically trigger the childhood attachment pattern in adults. When triggered, based on an individual's attachment style, one seeks out safety and availability (Ayadi et al., 2024). Thus, parenting styles directly and indirectly affect adolescent behavioral problems, and choosing the appropriate style can help prevent such issues (Luo et al., 2023). A mother's personality traits and parenting styles can significantly impact the family's emotional climate. Mothers with positive personality traits such as extraversion, agreeableness, and conscientiousness tend to adopt authoritative and supportive parenting styles. These mothers foster warm and welcoming environment, establishing a positive and healthy emotional climate within the family. On the other hand, mothers with negative personality traits such as neuroticism may gravitate towards authoritarian or neglectful parenting styles, which can contribute to a negative emotional climate in the family (Mader et al., 2023). On the other hand, the emotional climate of the family plays a crucial role in shaping adolescents' behaviors. As research demonstrated that emotional climate of the family is one

of the most influential factors in enhancing the quality of life and psychological characteristics of children. This relationship can be examined indirectly through the emotional climate of the family. The emotional climate of the family encompasses a set of beliefs, attitudes, and relational dynamics within the family environment, including security, encouragement, affirmation, and shared experiences among couples, parents with children, and among siblings (Dayton et al., 2023). The emotional climate of the family, in turn, helps reduce behavioral problems such as aggression, defiance, and anxiety in adolescents. Conversely, a negative and unhealthy emotional climate can lead to increased behavioral problems in adolescents. Adolescents growing up in emotionally unhealthy environments may face feelings of worthlessness, anxiety, and anger, which can result in undesirable behaviors and psychological issues. Therefore, creating and maintaining a healthy emotional climate within the family is of paramount importance and can help prevent behavioral problems in adolescents (Lin & Muenks, 2024).

The initial social group that humans develop is the family, where various factors significantly contribute to children's growth compared to other influences. Specifically, parents' understanding of psychological nurturing techniques within the family plays a crucial role. The nurturing approach of parents influences the personality development of their children and their ability to adapt to various social situations (Mikaeili, & Salmani, 2021). This study examines how personality factors and parenting styles affect adolescent behaviors. Specifically, it seeks to understand how mothers' personality traits and their parenting styles can influence their adolescent daughters' behaviors. In particular, the study aims to investigate how the emotional climate of the family, as a mediator, might moderate or amplify these effects. The emotional climate of the family has been selected as mediator because the prevailing emotional environment within the family plays a vital role in adolescents' psychological and behavioral development (Ardakani et al., 2023). This climate can either enhance or diminish the positive or negative effects of personality traits and parenting styles. Indeed, the emotional climate of the family can serve as mediator between parenting practices and adolescents' behavioral responses. If the family climate is supportive and positive, adolescents may better manage behavioral challenges and be shielded from the negative impacts of certain parenting styles. The necessity of addressing behavioral problems in adolescent girls stems from the fact that these issues can have long-term and serious effects on their future

lives. Behavioral problems during adolescence can lead to further issues in adulthood, such as difficulties in communication, academic performance, and even employment. Thus, identifying factors that can either exacerbate or prevent these problems is of special importance. This research responds to concerns and gaps in the field of family psychology and education. Given the rapid social and cultural changes, parents may face new challenges in raising their children. This study aims to provide a scientific and precise perspective to help parents and counselors find effective strategies to reduce adolescent behavioral problems and improve the emotional climate of the family. Such research can contribute to the development of effective educational and intervention programs for parents and adolescents to better address the challenges of adolescence. For example, a research showed role of positive parenting in children's emotional-social adjustment (Erwin & Frey, 2023), another research showed impact of parenting styles on emotion regulation and behavioral problems in children (Gniewosz et al., 2022), and also research literature supported on relationship between parental functioning and children's behavioral disorders and relationship between parents' personality traits and adolescents' behavioral problems (Fosco et al., 2023; Granger et al., 2023). The researcher believes that this study can help parents, counselors, and professionals design more effective programs for preventing and managing behavioral problems in adolescent girls by gaining a better understanding of these complex relationships. Therefore, the aim of this research is to answer the question: Does the emotional climate of the family mediate the relationship between mothers' personality traits, their parenting styles, and behavioral problems in adolescent girls?

2. Materials and Methods

This study was descriptive-correlational research using Structural Equation Modeling (SEM). The statistical population of this research includes all students enrolled in the secondary school level in Zahedan city during the first semester of the 2023-2024 academic year. To estimate the sample size, the formula proposed by Tabachnick and Fidell in 2007 was used (Tabachnick & Fidell, 2007). According to this formula, the minimum sample size in correlational studies is calculated using the equation $10m+50 < n$, where n represents the sample size, m is a constant number ranging from 5 to 15, and mmm denotes the number of predictor variables. Based on this, sample size was determined as follows: $130=50+(8 \times 10)$ where there are 5 variables for personality traits (neuroticism, extraversion, openness to experience, conscientiousness, and agreeableness), 3 variables for

parenting styles (permissive, authoritarian, and authoritative), and 1 variable for the emotional climate of the family. Considering a 15% attrition rate, the final sample size was set at 150 participants. Sampling was conducted using a multi-stage cluster random sampling method. For this purpose, 3 schools from among all the schools in the secondary school level in Zahedan city were randomly selected. Subsequently, 6 classes from each selected school were randomly chosen, resulting in a total of 18 classes. In the final stage, 10 students were randomly selected from each class to form the statistical sample. Thus, 180 questionnaires were collected, of which 150 complete and valid responses were analyzed after screening based on inclusion and exclusion criteria. The inclusion criteria for the sample were: enrollment in the secondary school level, age between 13 and 18 years, and willingness of both the student and their parents to participate in the study. The exclusion criteria included: history of a debilitating physical illness, diagnosed psychological disorders, substance abuse, alcohol or use of psychoactive drugs by parents, concurrent participation in psychotherapy or psychological intervention classes, and incomplete responses to the questionnaire.

To safeguard the rights of participants and ensure their privacy and dignity, the following ethical considerations were observed: maintaining scientific integrity and honesty, ensuring anonymity of questionnaires and confidentiality of participants, voluntary and informed participation, protection of participants from any psychological harm, and no financial burden for participation. Participants were also informed that the results would be interpreted upon request.

Revised Behavior Problem Checklist (RBPC): The Revised Behavioral Problem Checklist by Quay in 1983 contains 88 items and aims to assess behavioral problems in children and adolescents aged 5 to 18 years (Quay, 1983). This questionnaire is completed by parents who are well-acquainted with individuals in this age range. The questionnaire evaluates behavioral issues related to conduct, attention, aggression, and anxiety. Scoring is based on three values: zero, one, and two. A score of two is assigned to behaviors observed as severe, a score of one is given to less severe problems, and a score of zero is used to indicate the absence of behavioral problems. The maximum score for each subscale is twice the number of items in that subscale, while the minimum score is zero. The range of individual scores varies from zero to 176. The developer reported acceptable criterion validity for this checklist, with test-retest reliability ranging from 0.49 to 0.83 and internal consistency ranging from 0.73 to 0.94 for six subscales (Quay, 1983). In Iran, the validity of the Revised Behavioral Problem Checklist

was demonstrated through item-total correlations, factor analysis, (Yousefi et al., 2015). Factor analysis with principal components and subsequent varimax rotation revealed four factors with eigenvalues greater than one. The reliability coefficient for questionnaire using Cronbach's alpha, was reported as 0.98.

The Revised NEO Personality Inventory (RNEOPI):

The Revised NEO Personality Inventory, created by Costa and McCrae in 1992 and it is a self-report questionnaire designed to measure the Big Five personality traits (Costa & McCrae, 1992). The short form of this questionnaire consists of 60 items, with 12 items each measuring one of the five major personality dimensions. The Revised NEO Personality Inventory assesses personality traits based on the well-known Five-Factor Model, which includes neuroticism, extraversion, and openness to experience, agreeableness, and conscientiousness. Scoring is based on a Likert scale, with responses ranging from 1 to 5. Each dimension is scored separately, resulting in five scores corresponding to the five personality traits. Reliability coefficients for this test have been reported between 0.73 and 0.81 in various studies (McCrae & Costa, 1997). A Study in Iran assessed the validity of this test in relation to other personality tests, finding correlations of 0.86 with the 16 Personality Factor Questionnaires by Cattell and 0.62 with the California Personality Inventory. A study employed concurrent validity and factor analysis, with Cronbach's alpha reliability coefficients ranging from 0.80 to 0.83 (Jafari et al., 2015).

The Parenting Styles Questionnaire (PSQ): The Parenting Styles Questionnaire by Baumrind (1991) was developed to assess different parenting styles and it includes permissive, authoritarian, and authoritative styles. This questionnaire comprises 30 items, with 10 items each addressing permissive, authoritarian, and authoritative parenting styles. Parents rate their practices using a 5-point Likert scale, with higher scores indicating greater use of the respective parenting style. Reliability coefficients for this questionnaire, as measured by test-retest reliability, were reported as 0.85 for permissive, 0.92 for authoritarian, and 0.81 for authoritative parenting styles (Baumrind, 1991). Baumrind (1991) also reported inverse correlations between authoritarian and permissive styles ($r=0.50$) and between authoritarian and authoritative styles ($r=0.52$). The reliability of the questionnaire was additionally assessed by Minaei & Nikzad (2017), who found acceptable validity and reliability, with Cronbach alpha coefficients of 0.62 for permissive, 0.74 for authoritarian, and 0.75 for authoritative parenting styles.

The Family Emotional Climate Questionnaire (FECQ): The Family Emotional Climate Questionnaire,

developed by Hill-Burn in 1964 (Frasier et al., 1970). It assesses the level of warmth in parent-child interactions. This questionnaire consists of 16 items, with a 5-point response scale ranging from 1 (very little) to 5 (very much) the first response indicates the weakest and the last response indicates the strongest emotional relationship that has existed between parent and child from the past to the present. In the study by Cooke et al. (2022), the concurrent validity of this scale was determined using the Hill-Burn Family

Emotional Climate Questionnaire, yielding a validity coefficient of 0.6 (Cooke et al., 2022). The overall reliability of this questionnaire in Iran, assessed with Cronbach alpha, was .904 (Razi & Asadi Majaeh, 2022).

3. Results

The average age of participants was calculated to be 15.32 years, and their average academic performance was found to be 17.96.

Table 1. Descriptive statistics of the research variables

Variable	N	Mean	SD
Behavioral problems	150	50.64	28.35
Conduct	150	20.52	12.32
Attention	150	20.77	12.54
Aggression	150	2.16	2.30
Anxiety	150	2.21	4.20
Neuroticism	150	36.84	6.82
Extraversion	150	37.86	6.50
Openness	150	36.49	4.69
Responsibility	150	37.96	4.47
Conscientiousness	150	42.12	7.50
Permissive	150	27.26	7.44
Assertive	150	32.08	6.89
Authoritarian	150	28.06	7.30
Family Emotional Climate	150	59.88	13.00
Father's emotional climate	150	29.76	7.38
Mother's emotional climate	150	30.12	7.02

Table 1 shows the average values and standard deviations of the study variables.

Table 2. Cronbach's Alpha, Composite Cronbach's alpha, and Average Variance Extracted Values

Variable	Cronbach's Alpha	Composite Cronbach's alpha	AVEV
Behavioral Problems	0.843	0.896	0.686
Agreeableness	0.116	0.241	0.151
Conscientiousness	0.744	0.791	0.273
Extraversion	0.605	0.718	0.234
Neuroticism	0.639	0.664	0.201
Openness	0.174	0.196	0.159
Assertive style	0.753	0.806	0.310
Authoritarian style	0.775	0.821	0.328
Permissive style	0.802	0.849	0.365
Family Emotional Climate	0.774	0.898	0.815

Table 2 presents the Cronbach's alpha, composite reliability, and average variance extracted for the constructs of the model. The values for reliability and composite reliability for all constructs in the study, except for agreeableness and openness to experience, were computed to be above 0.6. This indicates acceptable reliability and validity. The average variance extracted (AVE) values, used to assess convergent validity, were found to be above 0.3 for all components of the study. Since standardized questionnaires were used for data collection in Iran, any lack of convergent validity in the sub-constructs can be overlooked, provided there are no issues with the overall model fit.

Structural Model Fit: According to the data analysis algorithm in the PLS method, after assessing the measurement models, the structural model fit of the research is evaluated. Unlike measurement models, which focus on the relationships between latent variables and their indicators, the structural model analysis examines the relationships among latent variables themselves. In this section, three criteria are used to evaluate the structural model fit: (a) R^2 criterion, (b) Stone-Geisser criterion, and (c) Redundancy criterion. Table 3 presents the coefficients of determination, Stone-Geisser values, and redundancy criterion for the model constructs.

Table 3. Stone-Geisser Value, Adjusted R-squared, and Coefficient of Determination for the Model

Variable	sub-scale	ΔR^2	R^2	Q^2	Red
Behavioral Problems	-	0.428	0.392	0.463	0.244
Personality Traits	Agreeableness		-	0.017	-
	Conscientiousness		-	0.158	-
	Extraversion		-	0.111	-
	Neuroticism		-	0.065	-
	Openness		-	0.013	-
Parenting Styles	Assertive style		-	0.166	-
	Authoritarian style		-	0.196	-
	Permissive style		-	0.224	-
Family Emotional Climate	-	0.338	0.301	0.374	0.171
Mean		0.383	0.347	0.179	0.208

Values of 0.19, 0.33, and 0.67 are used as benchmarks for weak, moderate, and strong R^2 with higher values indicating better model fit. The average $R^2R^2R^2$ for the model falls within the moderate range (0.33 to 0.67) and is considered acceptable. Therefore, the predictive power of the model's constructs is adequate. Redundancy Criterion are defined with values of 0.02, 0.15, and 0.35 representing weak, moderate, and strong predictive power, respectively. A Q^2 value of zero or less for an endogenous construct indicates that the relationships between other constructs in the model and this endogenous construct are not well-explained. The Stone-Geisser Q^2 value showed that the average predictive power of the model is also within the moderate range (0.15 to 0.35) and acceptable. Therefore, the predictive power of the model's constructs is satisfactory. To evaluate the overall model fit, which includes both the measurement and structural model, the Goodness of Fit (GoF) criterion is computed as follows. First, the average communalities of the model's variables were calculated, resulting in a value of 0.179. The average $R^2R^2R^2$ values for these variables were found to be 0.383. Consequently, the GoF index, calculated using these values, is 0.26. The GoF values of 0.01, 0.25, and 0.36 are considered weak, moderate, and strong. Thus, the GoF value of 0.26 indicates an overall moderate model fit. Hence, the model has a satisfactory fit and further examination of the relationships within the model can be conducted. Values of 0.19, 0.33, and 0.67 are used as benchmarks for weak, moderate, and strong R^2 with higher values indicating

better model fit. The average R^2 for the model falls within the moderate range (0.33 to 0.67) and is considered acceptable. Thus, the predictive power of the model's constructs is satisfactory. The Stone-Geisser Q^2 and Redundancy Criterion are categorized as weak, moderate, and strong predictive power with values of 0.02, 0.15, and 0.35, respectively. If the Q^2 value for an endogenous construct is zero or less, it indicates that the relationships between other constructs in the model and this endogenous construct are not well-explained. The Stone-Geisser Q^2 showed that the average predictive power of the model is also within the moderate range (0.15 to 0.35) and acceptable. Therefore, the predictive power of the model's constructs is satisfactory.

To assess the overall model fit, which incorporates both measurement and structural components, the $Gof = \sqrt{\text{average } Q^2 \times \text{average } R^2}$ criterion is calculated. Based on the given formula, the average values of the variances shared among the model's variables were first calculated, yielding a value of 0.179. The average values of the $R^2R^2R^2$ for these variables were 0.383. Consequently, using the formula, the $Gof = \sqrt{0.179 \times 0.383} = \sqrt{0.0686} = 0.262$ criterion value is 0.26. According to Henseler et al. (2009), values of 0.01, 0.25, and 0.36 are considered weak, moderate, and strong, respectively. Therefore, a GoF value of 0.26 indicates a moderate overall model fit. Thus, the model demonstrates an acceptable level of fit, allowing for further examination of the relationships within the model.

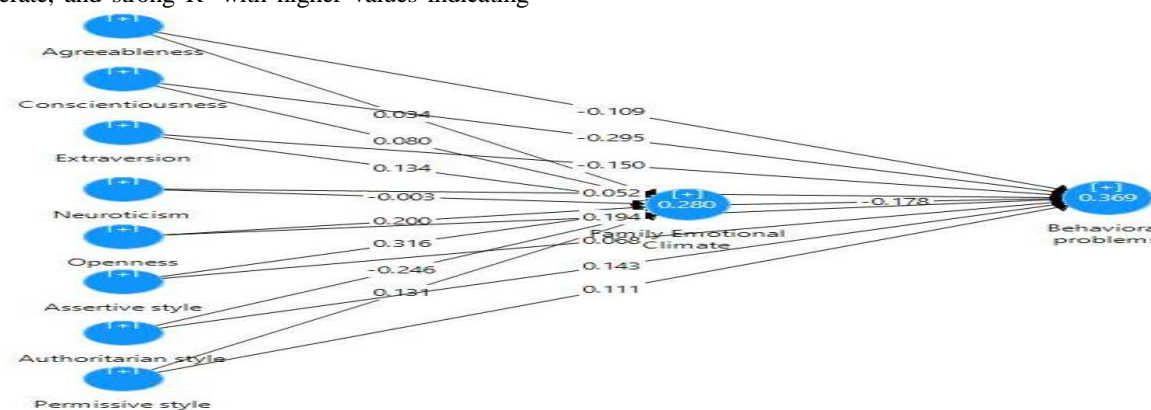
**Figure 1. Structural model of the estimated coefficients in the study**

Table 4. Summary of the model's direct and indirect coefficients

Pathways	Sub-scales Pathways	Beta	t-value	Sig.
PT -> FEC	A->FEC	-0.034	0.398	0.691
	C->FEC	0.080	0.996	0.320
	E->FEC	0.134	1.402	0.161
	N->FEC	-0.003	0.146	0.884
	O->FEC	0.200	2.735	0.006
PS->FEC	AS->FEC	0.316	3.582	0.001
	AUS->FEC	-0.246	3.136	0.002
	PES->FEC	0.131	1.288	0.198
PT->BP	A->BP	-0.090	0.360	0.719
	C->BP	-0.295	4.202	0.001
	E->BP	-0.150	2.170	0.030
	N->BP	0.052	0.655	0.513
	O->BP	0.194	2.644	0.008
PS ->BP	AS->BP	0.068	0.626	0.532
	AUS->BP	0.143	1.730	0.083
	PES->BP	0.111	0.133	0.184
FEC->BP	FEC->BP	-0.178	2.127	0.034
PT-> FEC-> BP	A->FEC->BP	-0.005	0.360	0.719
	C->FEC->BP	-0.014	0.823	0.411
	E->FEC->BP	-0.021	1.088	0.227
	N-> FEC->BP	0.002	0.129	0.897
	O->FEC-> BP	-0.003	1.643	0.101
PS->FEC->BP	AS->FEC->BP	-0.053	1.768	0.078
	AUS->FEC->BP	0.040	1.797	0.073
	PES->FEC->BP	-0.020	1.019	0.309

Note: PT: Personality Traits, FEC: Family Emotional Climate, A: Agreeableness, C: Conscientiousness, E: Extraversion, N: Neuroticism, O: Openness, PS: Parenting styles, AS: Assertive Style, AUS: Authoritarian Style, PES: Permissive Style, BP: Behavioral Problems.

In this model, behavioral problems serve as the dependent variable, while personality traits and parenting styles act as predictor variables. The family emotional climate functions as the mediating variable. A summary of the estimated coefficients for the direct and indirect relationships within the model is presented in the Table 4. The results revealed that openness had only a significant positive direct effect on family emotional climate (Beta=0.20, $t=2.735$, $p=0.006$). Agreeableness (Beta=-.0034, $t=.398$, $p=0.691$), conscientiousness (Beta=0.08, $t=0.996$, $p=0.320$) extraversion (Beta=0.134, $t=1.402$, $p=0.161$), and neuroticism (Beta=-0.003, $t=0.146$, $p=0.884$) had not significant direct effect on family emotional climate, respectively. Among parenting styles sub-scales, assertive style (Beta=0.316, $t=3.582$, $p=0.001$) had a significant positive effect on family emotional climate, while, authoritarian style (Beta=-0.246, $t=3.136$, $p=0.002$) had a significant negative direct effect on family emotional climate. Permissive style (Beta=0.131, $t=1.288$, $p=0.198$) had not significant direct effect on family emotional climate. Among personality traits, conscientiousness (Beta=-0.295, $t=4.202$, $p=0.001$), and extraversion (Beta=-0.150, $t=2.170$, $p=0.030$) had significant negative direct effect on behavioral problems, but openness (Beta=0.194, $t=2.644$, $p=0.008$) had positive significant direct effect on behavioral problems. Agreeableness (Beta=-0.090,

$t=0.360$, $p=0.719$) and neuroticism (Beta=0.052, $t=.655$, $p=0.513$) had not significant direct effect on behavioral problems. Sub-scales of parenting styles, namely; assertive style (Beta=0.068, $t=0.626$, $p=0.532$), authoritarian style (Beta=0.143, $t=1.730$, $p=0.0873$), and permissive style (Beta=0.111, $t=0.133$, $p=0.184$) had not significant direct effect on behavioral problems, respectively. Family emotional climate (Beta=-0.178, $t=2.127$, $p=0.034$) had a significant negative direct on behavioral problems. The results of the study demonstrated that personality traits with the mediation of family emotional climate had not significant indirect effect on behavioral problems, for instance, agreeableness (Beta=-0.005, $t=0.360$, $p=0.719$), conscientiousness (Beta=-0.014, $t=0.823$, $p=0.411$), extraversion (Beta=-0.021, $t=1.088$, $p=0.227$), neuroticism (Beta=0.002, $t=0.129$, $p=0.897$), and openness (Beta=-0.003, $t=1.643$, $p=0.101$) had not significant indirect effect through family emotional climate on behavioral problem. Parenting styles with the mediation of family emotional climate had not significant indirect effect on behavioral problems, for instance, assertive style (Beta=-0.053, $t=1.768$, $p=0.078$), authoritarian style (Beta=0.040, $t=1.797$, $p=0.073$), permissive style (Beta=-0.020, $t=1.019$, $p=0.309$) had not significant indirect effect through family emotional climate on behavioral problem.

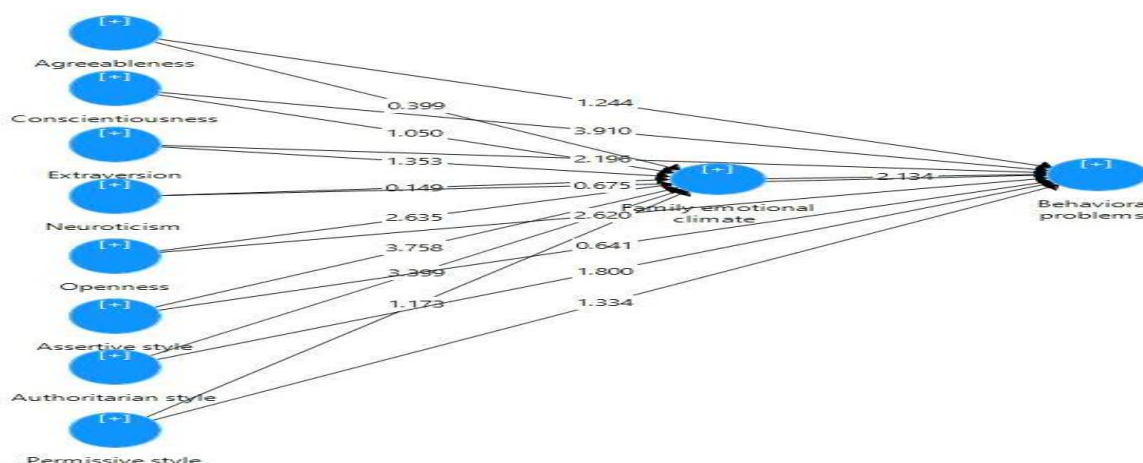


Figure 2. Direct and indirect t coefficients of the study model

4. Discussion and Conclusion

The results indicated that among the personality traits, only openness had a notable positive direct influence on the family's emotional climate, whereas the other traits did not significantly affect the family's emotional climate. Among the various parenting styles, the assertive approach greatly improved the emotional climate of the family, while the authoritarian approach had a significant adverse effect on the family emotional climate. Among personality traits, conscientiousness and extraversion demonstrated a clear negative direct influence on behavioral issues, while openness exhibited a considerable positive direct effect on behavioral problems. The family's emotional atmosphere had a significant adverse direct effect on behavioral issues. The personality characteristics and parenting approaches, influenced by the family emotional atmosphere, did not demonstrate a notable indirect impact on behavioral issues.

The results indicated that personality traits of agreeableness and extraversion in mothers had a negative impact on behavioral problems in adolescent girls. This finding are consistent with the previous studies (Gjode et al., 2023; Koutra et al., 2017). Shafie and Dehghani (2024) demonstrated that there is a significant relationship between maternal personality traits and children's psychological disorders, highlighting the extensive influence of a mother's personality on her child's mental health. A research confirmed that maternal personality traits are related to children's behavioral problems (Clayborne et al., 2023). They also affirmed the relationship between parental personality traits and behavioral issues in adolescents, indicating the stability of this relationship across different cultures and societies. The parental functioning affects children's behavioral disorders, underscoring the importance of parental roles in shaping and managing

children's behaviors. This alignment in findings underscores the broad validation of the results and emphasizes the significance of considering parental personality traits, particularly those of mothers, in predicting and managing children's behavioral problems. The noted negative role of agreeableness in mothers in predicting behavioral problems in adolescent girls suggests that mothers with higher levels of agreeableness have daughters who are less likely to experience behavioral issues. Agreeableness is a key personality trait characterized by a tendency towards cooperation, empathy, and social support. Given that maternal personality traits significantly influence children's behavioral problems (Warrier et al., 2024), it can be inferred that mothers who exhibit high levels of agreeableness are likely to have greater ability to understand and respond to their children's emotional needs. This ability contributes to creating a supportive and secure environment for adolescents, potentially reducing negative emotions and risky behaviors. According to attachment theory, parental emotional support is a crucial factor in forming secure attachments in children, which helps mitigate behavioral problems (Hajal & Paley, 2020). Research indicates that parental emotional support and empathy directly impact emotional regulation and behavioral problems in children. For example, a study revealed that the relationship between parental functioning and children's behavioral disorders is strongly influenced by parental emotional support (Bolsoni-Silva & Regina Loureiro, 2023). Similarly, a research shows that maternal behaviors characterized by high emotional support and empathy lead to a reduction in children's behavioral issues (Haslam et al., 2020). Therefore, high levels of agreeableness in mothers, which foster greater empathy and emotional support, may contribute to a decrease in behavioral problems in adolescent girls. The results of this study indicate that the personality trait of

conscientiousness in mothers acts as a negative predictor of behavioral problems in adolescent girls. In other words, mothers who possess a high level of conscientiousness have a greater ability to manage and mitigate problematic behaviors in their children. Research demonstrates that parental personality traits can significantly influence the emergence of behavioral problems in offspring (Mazza et al., 2020).

Conscientiousness, recognized as a positive personality trait, reflects an individual's ability to organize, plan, and execute tasks systematically and with precision. This trait enables mothers to interact more effectively with other family members and within educational and social environments. Such constructive interactions contribute to the development of stronger support networks, which can provide additional resources for managing and reducing behavioral issues in adolescent girls. Overall, maternal conscientiousness can reduce the likelihood of behavioral problems in their daughters, as conscientious mothers generally excel in family management and daily life, thereby creating a stable and orderly environment for their children. This stable environment reduces the exposure of children to psychological and environmental stressors, thereby decreasing the incidence of behavioral problems. Conscientious mothers are more likely to establish stronger family communications and actively participate in the daily and educational aspects of their children's lives, which can enhance the sense of security and support in their children. Conversely, lack of conscientiousness may result in inadequate monitoring and supervision of children's behaviors and activities, potentially leading to increased behavioral problems such as aggression and defiance. Therefore, conscientiousness in mothers plays a crucial role in creating a healthy and supportive environment for their children and can contribute to reduction of behavioral problems in adolescent girls (Batoool et al., 2023).

Other findings indicated that among the various parenting styles, the assertive approach greatly affected the emotional climate of the family, while the authoritarian approach had a significant adverse effect on the family emotional climate. The authoritative parenting style in mothers positively influences the emotional climate of the family, whereas an authoritarian parenting style negatively affects it. This finding aligns with the previous studies (Haslam et al., 2020; Papadopoulos, 2021; Qiu & Shum, 2022). The findings of previous studies demonstrated a significant relationship between parenting styles and the emotional climate of the family. These findings highlight the substantial impact of various parenting styles on the quality and intensity of familial affection and cohesion. A study supported significant relationship between parenting styles and the emotional

climate of the family, indicating that parental behavior and interactions with children directly influence the emotional and psychological atmosphere within the family (Kapetanovic & Skoog, 2021).

In explaining these findings, it is important to note that the authoritative parenting style, one of the three primary parenting styles, is characterized by a combination of warmth and appropriate control. This style is typically associated with more positive behaviors and fewer behavioral problems in adolescents (McKenna et al., 2020). Authoritative parents often exhibit positive traits such as extraversion and agreeableness, which contribute to creating warm and supportive family environment. By providing emotional support and setting clear boundaries and rules, these parents strengthen feelings of security and trust among family members. Studies have shown that a positive emotional climate in the family is a crucial factor in improving the quality of life and psychological characteristics of children (Léger-Goodes et al., 2023). In an environment where parents behave authoritatively and supportively, children experience greater acceptance and respect and are less prone to anxiety and stress. Authoritative parents help their children develop social and emotional skills by creating spaces for dialogue and problem-solving. These skills contribute to maintaining a positive emotional climate within the family. On the other hand, one of the key characteristics of the authoritative parenting style is the appropriate balance between support and control. This balance allows parents to provide emotional support while also establishing rules and boundaries essential for healthy development. This balanced approach of support and control aids in creating a positive emotional climate within the family, as children feel that their parents are attentive to their needs while maintaining clear expectations. Conversely, the findings also reveal that an authoritarian parenting style negatively predicts the emotional climate of the family. The authoritarian style, characterized by strict control and a lack of warmth, is regarded as an undesirable parenting style. This style is associated with more negative behaviors and behavioral problems in adolescents. Authoritarian parents often impose rigid rules and enforce them without regard for their children's needs and feelings. This behavior can create feelings of insecurity and distrust among children, resulting in a more negative emotional climate within the family. Studies have shown that a negative emotional climate in the family is a significant factor in reducing the quality of life and psychological characteristics of children (Sheller et al., 2018).

In summary, mothers who possess high levels of agreeableness and conscientiousness are generally more capable of adopting an authoritative parenting style. This

style, characterized by a blend of warmth and appropriate control, directly contributes to reducing problematic behaviors in children (Pérez Lago et al., 2021). Conscientious mothers, by creating an organized and supportive environment, are able to provide suitable guidance and monitor their children's daily activities. Due to their ability to set goals and establish structured routines at home, these mothers can play a significant role in reducing stressors and increasing emotional support, ultimately leading to a reduction in behavioral problems in adolescent girls. Thus, it can be concluded that agreeableness and conscientiousness in mothers not only enhance parenting styles and parental supervision but also, by creating a supportive and organized family environment, contribute to reducing behavioral problems in adolescent girls.

5. Ethical Considerations

Compliance with ethical guidelines

This article considered all ethical principles.

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Authors' contributions

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Conflicts of interest

The authors of this study do not have any conflicts of interest.

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