

The Relationship Between Parenting Styles and Perceived Stress Among Primary School Students: The Mediating Role of Creative and Critical Thinking Dispositions

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Abstract

This study aimed to examine the relationship between parenting styles and perceived stress among primary school students and to determine the mediating roles of creative and critical thinking dispositions in this relationship. The study was conducted using a quantitative research approach and employed a relational survey model. The sample consisted of 598 primary school students and their parents from the European side of Istanbul. Data were collected using the Creative Thinking Scale, Critical Thinking Scale, Perceived Stress Scale, and Multidimensional Parenting Styles Assessment Scale. Descriptive statistics, independent samples t-tests, ANOVA, and mediation analyses using the PROCESS macro were conducted for data analysis. The findings indicated that students' perceived stress levels were at a lower-moderate level, whereas creative and critical thinking levels were high. The majority of parents demonstrated a positive reinforcement parenting style. Parenting styles had a limited but statistically significant effect on perceived stress. However, creative and critical thinking dispositions did not play a significant mediating role in the relationship between parenting styles and perceived stress. Overall, the findings suggest that the relationship between parenting styles and perceived stress is limited and that cognitive processes such as creative and critical thinking do not significantly mediate this relationship among primary school students.

Keywords:

Parenting Styles, Perceived Stress, Critical Thinking, Creative Thinking



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Introduction

Childhood is a critical developmental period during which the foundations of an individual's cognitive, emotional, and social development are established. The healthy progression of this developmental process largely depends on the environmental conditions in which the child is situated. In this context, one of the most important environmental factors influencing a child's development

is the family environment, particularly parental attitudes. The attitudes and behaviors exhibited within the family directly determine the child's personality development, social adjustment, and psychological well-being (Grolnick & Pomerantz, 2009; Yan et al., 2024). Indeed, the family is considered the most fundamental immediate environment supporting a child's development, and especially during the primary school years, parental involvement serves as a significant determinant of children's academic achievement, motivation, and school adjustment (Halimah, 2024). When evaluated within the framework of Bronfenbrenner's ecological systems theory, this situation reveals that child development is shaped through multilayered environmental interactions, with parental attitudes playing a central role at the microsystem level (Bronfenbrenner, 1979). Accordingly, parental attitudes have a significant impact on child development and adjustment outcomes.

In the literature, parental attitudes are generally categorized into three main types: democratic (authoritative), authoritarian, and permissive (Fonseca et al., 2020). Democratic parenting provides a supportive structure that allows autonomy. In contrast, authoritarian and overly controlling attitudes are reported to be negatively associated with children's psychological adjustment (Özdemir & Yalçın, 2021; Wolfradt et al., 2003). Relevant research indicates that warm, accepting, and supportive parental attitudes are positively associated with children's social and emotional development (Sümer et al., 2010; Qian et al., 2024). However, it has increasingly been emphasized in recent years that the effects of parental attitudes are not limited to emotional and behavioral outcomes but also involve systematic relationships with higher-order cognitive processes. At this point, the relationship between parental attitudes and cognitive processes has emerged as a distinct area of investigation in the literature. Findings indicate that parenting styles are significantly associated with children's academic achievement and higher-order thinking skills (Deng et al., 2023; Kaya et al., 2012). The study by Deng et al. (2023) demonstrates that parental attitudes are related to children's critical thinking skills and dispositions. Similarly, parenting approaches that support autonomy are reported to be associated with children's intrinsic motivation, self-regulation, and independent thinking processes (Soenens & Vansteenkiste, 2010). However, the majority of existing studies explain the effects of parenting attitudes on children's psychological and cognitive outcomes primarily through direct relationships (Soenens & Vansteenkiste, 2010; Ryan & Deci, 2017; Kaya et al., 2012; Deng et al., 2023). Studies investigating the cognitive mechanisms through which parenting attitudes influence children's experiences of stress appear to be limited. This highlights the need to examine the effects

of parenting attitudes on child development from a more multidimensional perspective.

Perceived stress is defined as a subjective experience that arises from an individual's evaluation of environmental demands in relation to their coping capacity (Lazarus & Folkman, 1984; as cited in Folkman, 2013). Perceived stress during childhood has significant effects on academic achievement, social relationships, and psychological adjustment (Compas et al., 2001). It is suggested that parental attitudes displayed within the family environment are among the primary determinants shaping children's perceptions of stress. Supportive parental attitudes are positively associated with individuals' coping skills and psychological well-being, whereas oppressive attitudes are reported to be positively associated with stress and anxiety levels (McLeod et al., 2007; Moran et al., 2018). However, empirical evidence regarding the cognitive processes through which this relationship emerges is limited. This highlights the need to examine potential mediating variables. During the primary school years, children begin to develop higher-order cognitive skills such as problem solving, generating alternative ideas, and evaluating situations from different perspectives. In this process, supportive parenting attitudes may foster children's abilities to think independently, generate alternative solutions, and evaluate life events more realistically, whereas authoritarian and overly controlling attitudes may hinder the development of these skills. Therefore, creative and critical thinking dispositions are thought to function as balancing cognitive mechanisms in the relationship between parenting attitudes and perceived stress by influencing how children perceive and interpret stressful situations.

From a theoretical perspective, the conceptual model of the present study is grounded in several interrelated theoretical approaches. Social Cognitive Theory emphasizes that individuals' behaviors and emotional experiences are shaped through the reciprocal interaction of personal, environmental, and cognitive factors (Bandura, 1986). This perspective suggests that parenting attitudes influence not only children's behaviors but also the ways in which they perceive and interpret environmental events. Similarly, Lev Vygotsky's (1978) sociocultural approach proposes that cognitive development is constructed through social interactions and environmental support, thereby explaining the critical role of parent-child interactions in the development of higher-order cognitive processes. At this point, Self-Determination Theory states that when parents support children's basic psychological needs—such as autonomy, competence, and relatedness—children's psychological resilience and internal resources are strengthened (Ryan & Deci, 2017). Such a supportive family environment may contribute to the

development of children's higher-order cognitive skills, enabling them to evaluate stressful situations in more adaptive ways. Indeed, the Cognitive Appraisal Theory of Stress also emphasizes that an individual's level of stress is closely related to how events are interpreted and cognitively appraised (Lazarus & Folkman, 1984; as cited in Folkman, 2013). Accordingly, the strengthening of higher-order cognitive processes may help children make more effective sense of environmental stressors and enhance their capacity to cope with stress.

Higher-order cognitive skills encompass complex mental processes such as analyzing, evaluating, and adapting information to new situations (Anderson & Krathwohl, 2001) and are closely related to skills such as creative and critical thinking. Creative thinking is associated with an individual's capacity to generate original and diverse ideas and is considered an indicator of creative potential through divergent thinking (Runco & Acar, 2012). Creativity is regarded not only as an individual trait but also as a dynamic process shaped by environmental factors. Research indicates that supportive and autonomy-supportive parental attitudes are positively associated with children's creativity, whereas oppressive and overly controlling attitudes may negatively affect overall creativity (Quan, 2025; Wang, 2023). Critical thinking is a higher-order cognitive skill encompassing processes such as analysis, evaluation, and decision-making. This skill is reported to be significantly and positively associated with metacognitive awareness (Bakır & Eğmir, 2022). Additionally, parental attitudes may indirectly influence critical thinking dispositions through variables such as self-esteem (Wang et al., 2020). The primary reason for considering creative and critical thinking as mediating variables in this study is that these cognitive dispositions may influence how children evaluate their environmental experiences and cope with stress. Creative thinking may help individuals generate alternative solutions and approach stressful situations more flexibly, whereas critical thinking may support the processes of analyzing situations and making more functional decisions. Considering that cognitive processes develop rapidly during the primary school years, the role of parenting attitudes in the development of these skills becomes particularly important in relation to children's stress experiences. Therefore, examining creative and critical thinking together may contribute to a more comprehensive understanding of the cognitive processes underlying children's experiences of stress.

Indeed, research shows that there are significant relationships between critical thinking skills and problem-solving abilities and that these cognitive skills interact with one another (Liu et al., 2025). Studies also indicate that creative learning environments support

cognitive skills and that there are relationships among higher-order skills such as creativity, critical thinking, and problem solving (Yurt, 2025). From this perspective, considering critical and creative thinking together helps individuals solve problems more effectively in both academic and everyday life. Moreover, such cognitive skills are not limited to problem-solving processes but also play a determining role in how individuals evaluate and make sense of the situations they encounter (Crilly, 2025). This, in turn, shapes individuals' perceptions of and responses to stressful experiences. The responses individuals give to the problems they encounter throughout their lives directly affect their stress experiences. Stress is a psychological and physiological condition that arises when individuals perceive environmental or internal demands as threatening (Karcı & Balcı-Çelik, 2024). As perceived stress increases, life satisfaction decreases, and students' academic and social functioning are negatively affected (Ekşi et al., 2020). Since perceived stress is a subjective experience, the same situation may be evaluated differently by different individuals. Additionally, a negative relationship has been identified between critical thinking and perceived stress (Arıbaş & Oğuzhan, 2024).

A review of the literature indicates that parenting styles, perceived stress, and higher-order cognitive skills have predominantly been examined in isolation (Kaya et al., 2012; Deng et al., 2023; McLeod et al., 2007; Moran et al., 2018). However, there is a notable scarcity of studies investigating the effects of parenting styles on psychological outcomes through cognitive processes (Soenens & Vansteenkiste, 2010). Although mediating variables have been considered in existing research, these studies have largely focused on other psychological constructs, such as self-esteem (Wang et al., 2020), and holistic models that simultaneously address both creative and critical thinking remain limited. Furthermore, despite research exploring the relationship between critical thinking and perceived stress (Arıbaş & Oğuzhan, 2024), there is a lack of studies that examine these variables within a multiple mediation framework.

Examining creative and critical thinking dispositions together is thought to contribute to a more holistic understanding of children's cognitive processes. Although there are studies in the literature addressing the relationship between parenting styles and perceived stress, research investigating the cognitive mechanisms through which this relationship emerges appears to be limited. In particular, the lack of studies examining creative and critical thinking dispositions as simultaneous mediating variables constitutes one of the distinctive aspects of the present study. Examining the simultaneous mediating roles of creative and critical thinking may reveal the interconnected

functioning of these cognitive dispositions and provide a more comprehensive understanding of the relationship between parenting styles and children's stress experiences. Furthermore, existing research has largely focused on adolescence and adulthood, whereas studies exploring the relationship between these cognitive processes and stress experiences among primary school children remain limited. However, the primary school period is considered a critical developmental stage during which higher-order cognitive skills, problem-solving approaches, and coping strategies begin to develop. In this context, the present study has the potential to provide important insights into how cognitive processes are associated with stress experiences during early developmental stages. Therefore, the primary aim of the present study is to examine the relationship between parenting styles and perceived stress among primary school students and to test the simultaneous mediating roles of creative and critical thinking dispositions in this relationship.

1. What are the levels of students' perceived stress, creative thinking, and critical thinking?
2. Which parenting styles do students' parents exhibit?
3. Do students' perceived stress levels differ according to their parents' parenting styles?
4. Does creative thinking disposition play a significant mediating role in the relationship between parenting styles and perceived stress?
5. Does critical thinking disposition play a significant mediating role in the relationship between parenting styles and perceived stress?
6. Do creative and critical thinking dispositions jointly play a significant mediating role in the relationship between parenting styles and perceived stress?

Method

This section of the study presents the research model, data collection instruments and their characteristics, the procedures carried out within the scope of data analysis, and the processes conducted to ensure validity and reliability. Additionally, explanations regarding the ethical considerations of the research are also provided.

Research Model

In this study, the research process includes quantitative methods during data collection and analysis. Within this framework, single and relational survey models, which are among the general survey models, were employed (Karasar, 2020). In general, survey research involves collecting data within a specific period in

order to describe the nature of existing conditions and to identify relationships among particular variables. Therefore, survey studies may vary in complexity, ranging from simple frequency counts to relational analyses (Cohen, Manion, & Morrison, 2007). Survey models are typically used to examine a broad subject area or population in order to measure or describe any generalized characteristic. According to Anderson (1990), as cited in Balci (2000), there are four types of research commonly conducted in educational settings: descriptive, causal, generalization, and fundamental or theoretical research. Considering these classifications, the present study can be categorized as a "generalization" type of research. Generalization studies aim to extend findings derived from causal research to new contexts or situations (Shadish, Cook, & Campbell, 2002).

Participants

The sample of the study consisted of 598 students enrolled in public primary schools located on the European side of Istanbul. The sample was determined using the convenience sampling method. Convenience sampling is based on selecting participants from units that are accessible and feasible for the researcher (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2012; Etikan et al., 2016). This method provides practical advantages in terms of time, cost, and accessibility. While using this sampling method, efforts were made to reach participants from different grade levels and with diverse demographic characteristics in order to reduce potential sampling bias.

The convenience sampling method was preferred in this study because collecting data based on voluntary participation was considered more practical and feasible. The sample of the study comprised primary school students and their parents from five schools located in the districts of Küçükçekmece, Avclar, and Bakirköy. Demographic information regarding the participants is presented in Table 1.

Of the 598 participants included in the study, 55.7% were female and 44.3% were male. The majority of the participants (67.9%) were third-grade students, while 32.1% were fourth-grade students. Regarding the number of siblings, the largest proportion of participants (30.6%) had two siblings, followed by those with one sibling (29.1%). In terms of mothers' educational level, the highest proportion (34.3%) consisted of primary school graduates, followed by middle school graduates (27.3%) and high school graduates (24.1%). Similarly, regarding fathers' educational level, the largest proportion (32.6%) consisted of high school graduates, followed by primary school graduates (27.8%) and middle school graduates (26.3%). Overall, the educational levels of the participants' parents were predominantly concentrated at the primary, middle, and high school levels.

Table 1.
Demographic Characteristics of the Participants

Variable	Category	n	%
Gender	Female	333	55,7
	Male	265	44,3
Grade Level	3rd Grade	406	67,9
	4th Grade	192	32,1
Number of Siblings	0	35	5,9
	1	174	29,1
	2	183	30,6
	3	145	24,2
	4	36	6,0
	5	19	3,2
	6	6	1,0
Mother's Educational Background	Uneducated	19	3,2
	Primary School	205	34,3
	Middle School	163	27,3
	High School	144	24,1
	Associate Degrees	17	2,8
	Bachelor's Degrees	49	8,2
	Postgraduate Degrees	1	0,2
Father's Educational Background	Uneducated	9	1,5
	Primary School	166	27,8
	Middle School	157	26,3
	High School	195	32,6
	Associate Degrees	19	3,2
	Bachelor's Degrees	49	8,2
	Postgraduate Degrees	3	0,5

Data Collection Instruments

Four data collection instruments were employed to gather the data for this study: the Creative Thinking Scale, the Critical Thinking Scale, the Parenting Style Scale, and the Perceived Stress Scale. The creative and critical thinking scales were administered to primary school students, whereas the parenting style and perceived stress scales were administered to the mothers or fathers of the same students in 2025. Quantitative data were obtained through the administration of these instruments, and subsequent analyses were conducted based on the collected data. Detailed information regarding the data collection instruments is presented below.

Creative Thinking Scale

In this study, the Creative Thinking Scale developed by Deniz and Demir (2024), with established construct validity, was employed. The scale was developed to determine the creative thinking potential of students aged 9–15. The construct validity of the scale was examined through both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), and the model fit indices indicated a satisfactory fit. The test-retest reliability coefficient of .71 demonstrates that the scale maintains measurement stability over time and yields consistent results. Furthermore, the internal consistency coefficient of the scale was calculated

as .758 based on the data obtained within the scope of this study. In addition, the difference analysis conducted between the upper 25% and lower 25% groups yielded statistically significant results [$t(249.295) = -47.28, p < .001$]. These findings indicate that the scale produces valid and reliable measurements. The scale consists of 12 items, is unidimensional, and is structured as a 5-point Likert-type scale. Additionally, in order to determine students' creative thinking levels based on the data obtained from the measurement tool, the level ranges specified below were utilized.

1.00–1.80 "Very Low"

1.81–2.60 "Low"

2.61–3.40 "Moderate"

3.41–4.20 "High"

4.21–5.00 "Very High"

Critical Thinking Scale

Another data collection instrument used in this study was the Critical Thinking Scale, whose construct validity was established by Döner and Demir (2022) through a study conducted with students aged 9–14. The scale consists of 21 items structured on a 5-point Likert-type format and includes three factors focusing on skills such as analysis, evaluation, and interpretation. Within the scope of the construct validity study, different sample groups were employed independently at each stage of the analysis (EFA, CFA, and test-retest). Since a second-order confirmatory factor analysis (CFA) was performed, the scale demonstrates a structure suitable for use based on the total score. Based on the data obtained in the present study, the internal consistency coefficient of the scale was calculated as .832. The reliability coefficients for the sub-dimensions were found to be .781 for the disposition sub-dimension, .580 for the analysis sub-dimension, and .822 for the dialectical sub-dimension. Furthermore, analyses conducted between the upper and lower groups revealed a statistically significant difference between the mean scores of the groups [$t(264.157) = -43.21, p < .001$]. These findings indicate valid and reliable measurements. In addition, in order to determine students' critical thinking tendencies based on the data obtained from the measurement tool, the level ranges were as follows.

1.00–1.80 "Very Low"

1.81–2.60 "Low"

2.61–3.40 "Moderate"

3.41–4.20 "High"

4.21–5.00 "Very High"

Perceived Stress Scale

Another data collection instrument used in this study was the Perceived Stress Scale. Developed by Snoeren-Hoefnagels (2014), the scale consists of nine items with a single-dimensional structure. The original

scale was administered to 223 students (100 girls and 123 boys) aged between 8 and 11 years. Higher scores on the scale indicate higher levels of perceived stress among individuals. The scale was adapted into Turkish by Oral and Ersan (2017). As part of the adaptation study, construct validity analyses, criterion-related validity, and reliability analyses, including test-retest reliability and Cronbach's alpha internal consistency coefficient, were conducted. Based on these analyses, the scale was reported to be a valid and reliable measurement tool and considered appropriate for determining perceived stress levels in children aged 8–11 years. Within the scope of the present study, the internal consistency coefficient of the scale was calculated as .732. Additionally, analyses conducted between the upper and lower groups revealed a statistically significant difference between the mean scores of the groups [$t(224.966) = -46.078, p < .001$]. These findings indicate that the scale produces valid and reliable measurements. Furthermore, in order to determine students' stress levels based on the data obtained from the measurement instrument, the level ranges specified below were utilized.

- 1.00–1.75 "Low Stress Level"
1.76–2.50 "Lower-Moderate Stress Level"
2.51–3.25 "Upper-Moderate Stress Level"
3.26–4.00 "High Stress Level"

Multidimensional Parenting Styles Assessment Scale

In this study, the Multidimensional Parenting Styles Assessment Scale, adapted into Turkish by Karababa (2019), was used to determine parenting styles. In the adaptation study of the scale, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted for validity and reliability purposes. In addition, criterion-related validity, internal consistency, and test-retest reliability analyses were performed, and the related coefficients were found to

be at acceptable levels. The scale consists of 34 items and seven sub-dimensions: (1) Proactive Parenting (6 items), (2) Positive Reinforcement (4 items), (3) Intimate Relationship (3 items), (4) Supportive Approach (3 items), (5) Hostility (7 items), (6) Low Control (7 items), and (7) Physical Control (4 items). The scale can also be evaluated by calculating total scores for two dimensions: positive parenting (proactive parenting, positive reinforcement, warmth, and supportiveness) and negative parenting (hostility, low control, and physical control) (Karababa, 2019).

In the present study, the internal consistency values of the factors were examined separately. The internal consistency coefficients were examined separately for these two dimensions, yielding coefficients of .766 for comprehensive positive parenting and .711 for comprehensive negative parenting. These findings indicate that the internal consistency coefficients of both dimensions are above the acceptable threshold of .60 (Akbulut, 2010, Hair et al., 2013).

Data Analysis

Data analyses were conducted using IBM SPSS Statistics 25 and Jamovi. Initially, missing data and outlier analyses were performed. Descriptive statistics, including frequency, percentage, mean, and standard deviation values, were calculated. Independent samples t-test and one-way analysis of variance (ANOVA) were used for comparisons between groups. The level of statistical significance was set at .05. The normality of the data distribution was assessed by examining skewness and kurtosis values. Decisions regarding the use of parametric or non-parametric analyses were made based on the normality distribution of the independent variables. In this context, the following statistical values and analysis techniques were included in the study.

Table 2

Skewness-kurtosis values for measurement instruments and independent variables

Variable Category		Perceived Stress Scale		Creative Thinking Scale		Critical Thinking Scale	
		Skewness	Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis
Gender	Female	,309	-,168	-,341	-,023	-,441	,389
	Male	,164	-,409	-,414	-,284	-,155	-,166
Grade Level	3rd Grade	,228	-,300	-,359	-,086	-,341	-,010
	4th Grade	,251	-,258	-,396	-,263	-,152	,085
	Uneducated	-,028	,576	,157	-,137	-,727	,528
Mother's Educational Background	Primary School	,162	-,302	-,448	-,186	-,338	,241
	Middle School	,346	-,406	-,135	-,233	-,293	-,299
	High School	,143	-,209	-,369	-,145	-,062	,117
	Associate Degree	1,402	2,846	-,257	6,563	-,1048	,829
	Bachelor's/Postgraduate Degree	,264	,089	-,013	-,810	-,023	-,1115
Father's Educational Background	Uneducated	-,085	,139	-,406	-,183	-,176	2,093
	Primary School	,230	-,332	-,349	-,341	-,265	,106
	Middle School	,246	-,169	-,237	-,142	-,542	,604
	High School	,138	-,410	-,435	-,034	-,236	-,261
	Associate Degree	,205	,277	-,497	,029	,109	-,1327
Overall Scale	Bachelor's/Postgraduate Degree	,595	,041	-,699	,968	-,688	,563
		,230	-,300	-,356	-,141	-,267	,043

Table 2 indicates that the data obtained from the measurement instruments demonstrated normal distribution within acceptable limits (-2 to $+2$) in terms of gender and grade level (George & Mallery, 2010). However, the skewness and kurtosis values for mothers' education level fell outside the acceptable range for the creative thinking and perceived stress scales. Therefore, non-parametric analyses were employed for the relevant measurements. It can also be observed that the skewness and kurtosis values for the overall scale scores were within acceptable limits. Additionally, Jamovi version 2.6.44 and the PROCESS Macro 5.0 statistical programs were used to examine the relationship between parenting styles and perceived stress among primary school students and to evaluate this relationship with the mediating roles of creative and critical thinking tendencies.

Within the scope of the study, the relationships among perceived stress, creative thinking, critical thinking, and parenting styles were examined using mediation models. First, the mediating role of critical thinking in the relationship between perceived stress and creative thinking was tested. Subsequently, the mediating role of creative thinking in the relationship between perceived stress and critical thinking was examined. In addition, the mediating effects of creative thinking and critical thinking on the relationship between parenting styles and perceived stress were evaluated separately. Finally, a serial mediation model including both creative thinking and critical thinking was tested.

Mediation analyses were conducted using PROCESS Macro, and PROCESS Model 4 was employed for the simple mediation analyses. The significance of indirect effects was evaluated using the bootstrap method based on 5000 resamples, and 95% confidence intervals were taken into account. Confidence intervals that did not include zero were considered indicative of a significant indirect effect. The findings were interpreted within the limitations of the cross-sectional design, and therefore no causal inferences were made.

Validity and Reliability of the Data

First, careful consideration was given to ensuring that the measurement instruments used in the study were appropriate for the sample and that the necessary construct validity studies had been conducted. In

addition, internal consistency coefficients and upper-lower group discrimination indices were examined to assess the reliability and validity of the measurement data. The results of these analyses were presented in the sections describing the measurement instruments. The obtained values indicated that the measurements produced valid and reliable results.

Ethical Approval of the Research

The study was conducted following ethical approval obtained from the İstanbul Kültür University Ethics Committee, in accordance with the decision dated April 21, 2025, and numbered 2025/17.

Findings

This section presents the findings obtained from the research data along with relevant interpretations. The findings are presented in accordance with the order of the research questions.

Research problem 1: What are the perceived levels of stress, creative thinking, and critical thinking among students?

The first objective of the study was to examine students' levels of perceived stress, creative thinking, and critical thinking. In this context, interpretations regarding students' levels were made based on arithmetic means and predetermined level ranges. The value intervals specified in the measurement instruments were used to determine these level ranges.

As shown in Table 3, students' perceived stress levels were observed to be "low-medium," while their creative and critical thinking levels were "high."

Research problem 2: What parenting styles do parents exhibit?

The second sub-objective of the study was to examine the parenting styles of the parents. In this context, the parenting style with the highest arithmetic mean score in the data collection instrument was identified as the dominant parenting style for each participant. The distribution of parenting styles is presented in Table 4.

Table 3.
Students' perceived stress, creative thinking, and critical thinking levels

	N	Min	Max	Mean	Standard deviation	Level
Students' perceived stress	598	1,00	4,00	2,2573	,602	Lower Middle
Creative thinking	598	1,75	5,00	3,6199	,598	High
Critical thinking	598	1,86	5,00	3,6937	,595	High

Table 4.
Parenting Styles

Parenting Style	Total Number of Participants	%
Positive Reinforcement	264	44,1
Warmth	200	33,4
Supportiveness	123	20,6
Proactive Parenting	11	1,8
Total	598	100

Table 4 indicates that the majority of parents (44.1%) demonstrated a positive reinforcement parenting style. No parents exhibited physical control, lax control, or hostile parenting styles. The analysis of the dataset also revealed that some parents demonstrated characteristics of more than one parenting style; in such cases, parents were classified according to their most dominant parenting style.

Research problem 3: Do students' perceived stress levels differ according to their families' parenting styles?

Within the scope of this sub-objective, the effect of family parenting styles on students' perceived stress levels was examined. Since the significance values obtained from the test of homogeneity of variances were greater than .05 (ranging between .254 and .306), the variances were considered homogeneous. Therefore, one-way analysis of variance (ANOVA) was conducted. The results of the analysis are presented below.

Table 5.
The effect of parenting styles on perceived stress ANOVA

	Sum of Squares	df	Mean Square	F	p
Between Groups	2,862	-3	,954	2,653	,048
Within Groups	213,640	594	,360		
Total	216,502	597			

Figure 1.
Mediation model illustrating the mediating role of creative thinking between parenting styles and perceived stress

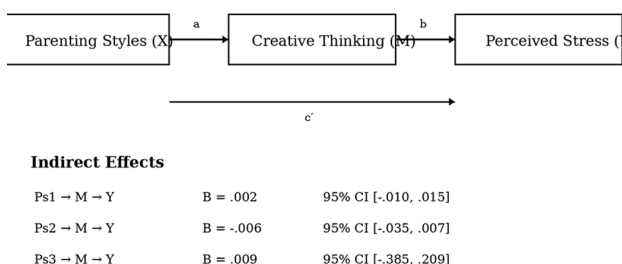


Figure 1 presents the mediation model examining the mediating role of creative thinking in the relationship between parenting styles and perceived stress.

Although one direct pathway was statistically significant, none of the indirect effects were significant, as the confidence intervals included zero.

Table 6.
The mediating role of creative thinking between parental style and perceived stress

Effect	B	se	t	p	LLCI	ULCI
X→M						
Ps1	,027	,056	,487	,626	-,083	,138
Ps2	-,073	,065	-1,120	,263	-,201	,055
Ps3	-,020	,184	-,109	,913	-,382	,342
R ²	.004	F .734		P=.532		
X→Y						
Ps1	-,055	,056	-,979	,328	-,165	,055
Ps2	-,110	,065	-1,673	,095	-,238	,019
Ps3	,367	,185	1,988	,047	,004	,729
R ²	.013	F=2,653		P=.048		
Indirect Path		B	BootSE	LLCI	ULCI	
Ps1 → M → Y		,002	,006	-,010	,015	
Ps2 → M → Y		-,006	,010	-,035	,007	
Ps3 → M → Y		,009	,182	-,385	,209	

Note: Ps --- Parenting style

When the table is examined, the findings of the mediation analysis conducted using the bootstrap method (5,000 samples) indicate that the indirect effects of variables X1, X2, and X3 on the dependent variable were not statistically significant. Since all confidence intervals included zero (X1: [-.010, .015]; X2: [-.035, .007]; X3: [-.385, .209]), it was concluded that the mediation effects were not statistically significant.

When the total effects were examined, only variable X3 demonstrated a statistically significant effect on the dependent variable (B = .367, p = .047). However, this effect lost its statistical significance in the direct effect model (p = .053). Furthermore, the non-significant indirect effects indicate that the mediation relationship was not supported.

Research problem 5: Does critical thinking tendency play a significant mediating role in the relationship between parenting styles and perceived stress?

This research question examined the mediating role of critical thinking tendency. The findings are presented below.

Figure 2.
Mediation model of critical thinking in the relationship between parenting styles and perceived stress

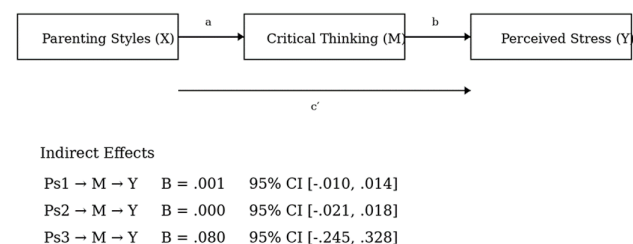


Figure 2 presents the mediation model examining the mediating role of critical thinking in the relationship between parenting styles and perceived stress. Since the confidence intervals for the indirect effects included zero, the mediation effect was not found to be statistically significant.

Table 7.

Mediating role of critical thinking between parental styles and perceived stress

Effect	B	se	t	p	LLCI	ULCI
X--M						
Ps1	,013	,056	,237	,812	-,096	,123
Ps2	-,072	,065	-1,105	,269	-,199	,056
Ps3	-,144	,183	-,789	,431	-,504	,215
R ² .004	F .751		P=,522			
Direct X--Y						
Ps1	-,055	,056	-,979	,328	-,165	,055
Ps2	-,110	,065	-1,673	,095	-,238	,019
Ps3	,367	,185	1,988	,047	,004	,729
R ² =.013	F=2,653		P=,048			
Indirect Path			B	BootSE	LLCI	ULCI
Ps1 → M → Y			,001	,005	-,010	,014
Ps2 → M → Y			,000	,009	-,021	,018
Ps3 → M → Y			,080	,154	-,245	,328

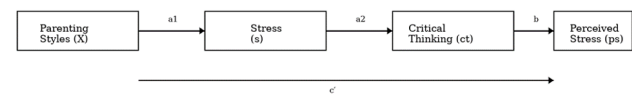
The results of the mediation analysis indicated that the effects of the independent variables on the mediating variable were not statistically significant ($p > .05$). Furthermore, the indirect effects obtained using the bootstrap method showed that all confidence intervals included zero (X1: [-.010, .014]; X2: [-.021, .018]; X3: [-.245, .328]). These findings indicate the absence of a mediating effect in the model. When the direct effects were examined, only variable X3 was found to have a statistically significant effect on the dependent variable ($B = .367$, $p = .047$). However, this effect was not observed to occur through the mediating variable. In conclusion, the findings do not support a mediating relationship in the examined model.

Research problem 6: Do creative and critical thinking tendencies together play a significant mediating role in the relationship between parenting styles and perceived stress?

Within the scope of this objective, creative thinking and critical thinking tendencies were considered together as mediating variables to examine their mediating relationships.

Figure 3.

Serial mediation model examining indirect pathways among variables



Indirect Effects

Ps1 → s → ct → ps	B = -.001	95% CI [-.015, .013]
Ps2 → s → ct → ps	B = .007	95% CI [-.006, .029]
Ps3 → s → ct → ps	B = .014	95% CI [-.027, .070]
Ps1 → s → Crt → ps	B = .001	95% CI [-.006, .011]
Ps2 → s → Crt → ps	B = -.002	95% CI [-.015, .007]
Ps3 → s → Crt → ps	B = .006	95% CI [-.011, .031]
Ps1 → s → ct → Crt → ps	B = .001	95% CI [-.008, .009]
Ps2 → s → ct → Crt → ps	B = -.004	95% CI [-.019, .004]
Ps3 → s → ct → Crt → ps	B = -.008	95% CI [-.044, .017]

Figure 3 presents the serial mediation model examining the relationships among parenting styles, stress, critical thinking, and perceived stress. The findings indicated that none of the indirect pathways were statistically significant, as all bootstrap confidence intervals included zero. The findings obtained in this regard are presented in Table 8:

Table 8.

Mediating roles of creative and critical thinking tendencies between parental styles and perceived stress

Indirect Path	B	BootSE	LLCI	ULCI
Ps1 → s → ct → ps	-,001	,006	-,015	,013
Ps2 → s → ct → ps	,007	,009	-,006	,029
Ps3 → s → ct → ps	,014	,023	-,027	,070
Ps1 → s → Crt → ps	,001	,004	-,006	,011
Ps2 → s → Crt → ps	-,002	,005	-,015	,007
Ps3 → s → Crt → ps	,006	,010	-,011	,031
Ps1 → s → ct → Crt → ps	,001	,004	-,008	,009
Ps2 → s → ct → Crt → ps	-,004	,006	-,019	,004
Ps3 → s → ct → Crt → ps	-,008	,015	-,044	,017

Note: Ps: Parenting style; s: style; ct: critical thinking; Crt: creative thinking; ps: perceived stress

When the bootstrap results of the serial mediation model were examined, it was observed that the confidence intervals for all indirect effect pathways included zero. This finding indicates that neither the specific indirect paths ($s \rightarrow ct \rightarrow ps$; $s \rightarrow Crt \rightarrow ps$) nor the full serial pathway ($s \rightarrow ct \rightarrow Crt \rightarrow ps$) were statistically significant. Therefore, it was concluded that the mediating variables in the model did not significantly mediate the relationship between the independent and dependent variables.

Discussion

This study focuses on the mediating roles of creative and critical thinking dispositions in the relationship between parenting styles and perceived stress. The findings obtained within the scope of the first objective of the study indicate that primary school students' perceived stress levels are at a "low-to-moderate" level. Based on this finding, it can be suggested that children in primary school experience

a certain degree of stress in their daily lives; however, this stress does not reach high or clinical levels. This result is consistent with various studies in the literature. For instance, Davis and Turner-Cobb (2023), in a study conducted with children aged 7–11, reported that the mean perceived stress score of the sample was close to the theoretical midpoint of the scale. Similarly, Eroen (2022), in a study involving 852 children aged 9–11, found that primary school students had low levels of perceived stress. Likewise, Lovenjak and Peklaj (2016) demonstrated that primary school students experienced school-related stress at low levels. One possible explanation for the relatively low perceived stress levels observed in the present study may be that, due to their age, children tend to perceive stress in a more superficial and short-term manner. According to the stress and coping theory proposed by Lazarus and Folkman (1984), individuals interpret environmental demands through cognitive appraisal processes and evaluate the adequacy of personal and environmental resources available to cope with these demands. Accordingly, how individuals perceive and evaluate such demands plays a crucial role in determining their stress levels (as cited in Folkman, 2013). Since children's cognitive capacities during the primary school period may not yet be fully developed. Additionally, according to the transactional theory of stress proposed by Richard Lazarus and Susan Folkman, stress is shaped by individuals' cognitive appraisal of a situation. It may therefore be argued that children at these ages experience relatively low levels of stress, since expectations arising from school and family environments are generally not perceived as threatening.

Another finding of the study indicates that students exhibit high levels of critical thinking disposition. A substantial body of research in the literature reports findings consistent with the results of the present study (Bakır & Eğmir, 2022; Demir, 2006; Oğuz & Aybek, 2024). However, there are also studies suggesting that primary school students' critical thinking dispositions are at a moderate level (Akar & Kara, 2016; Hocioğlu, 2020; Kiran, 2019; Ocak & Kalender, 2017). For instance, Yetgin and Katrancı (2020) reported that fourth-grade primary school students' critical thinking skills were at a moderate level, approaching the lower threshold. In line with the findings on critical thinking, the present study also revealed that students' creative thinking dispositions are at a high level. Similarly, Deniz and Demir (2024), in their validity and reliability study of the Creative Thinking Disposition Scale developed for students aged 9–15 in Türkiye, found that the mean scores of this age group were very close to those obtained in the present study. Işık and Uysal (2015), in a study comparing grade levels, demonstrated that third- and fourth-grade students scored significantly higher in flexibility, originality, and overall creative thinking than first- and second-grade students. On

the other hand, some studies indicate that students' creative thinking dispositions tend to decline as grade level increases (Atkıncı, 2001). The similarity observed between students' levels of creative and critical thinking dispositions in the present study may be explained by the conceptual overlap between these two types of thinking. While Facione (1990) defines critical thinking in terms of cognitive skills such as analysis, evaluation, inference, and explanation, Torrance (1974) and Guilford (1967) conceptualize creative thinking based on divergent thinking capacity. These two modes of thinking can be considered complementary, with development in one likely to support and enhance the other. Supporting this view, Yılmaz (2025), in a quasi-experimental study conducted with 80 middle school students in Kastamonu, found that design-based research activities significantly increased both creative and critical thinking dispositions compared to the control group. It was observed that, through design processes, students simultaneously employed creative idea generation and critical evaluation skills while working on real-life problem situations. In addition, the fact that the measurement instruments used in the study were based on self-report may also have contributed to the relatively high levels of these thinking skills reported by the students. The literature likewise suggests that students may evaluate their own thinking skills more positively than their actual level of competence, and that this tendency may stem from self-assessment biases and a lack of metacognitive awareness (Dunning et al., 2003).

According to the findings of the study, nearly all parents exhibited parenting styles that can be characterized as positive, namely "positive reinforcement," "warmth" and "supportiveness" The proactive parenting style was observed at a rate of only 1.8%, and no parents were identified as exhibiting "hostility," "physical control," or "low control" styles. This finding appears to differ, at least partially, from those reported in the literature. A review of studies on parental attitudes indicates that, alongside democratic parenting styles, negative parenting styles such as authoritarian, overprotective, or neglectful approaches are also observed at certain rates (Özdemir & Yalçın, 2021; Teke et al., 2020). This discrepancy may be attributed to structural differences in measurement instruments, the homogeneity of the sample, or participants' tendencies toward social desirability. In self-report-based measurements, social desirability bias can be a determining factor. Particularly in domains subject to social judgment, such as parenting practices, individuals may tend to provide responses aligned with normative expectations rather than their actual behaviors (Paulhus, 2002). The finding that proactive parenting was observed at a rate of only 1.8% is noteworthy. Proactive parenting involves supporting children in preparing for potential future challenges, developing strategies for managing unexpected

situations, and engaging in advance discussions with children about expectations and requirements (Parent & Forehand, 2017). Based on this result, proactive parenting, which represents a future-oriented and structured approach to parenting, has not yet gained widespread adoption among parents.

The findings of the study indicate that parenting style has a statistically significant but small effect on students' perceived stress levels. A review of the literature reveals that studies directly examining the relationship between parenting styles and perceived stress are limited. Some studies indicate that authoritarian and negative parenting styles lead individuals to perceive situations as more threatening, thereby contributing to higher levels of stress and avoidance responses (Repetti et al., 2002, as cited in Özdemir & Yalçın, 2021). A review of the literature also indicates that the effects of parenting on anxiety and stress become most evident when negative parenting styles are compared with positive parenting styles (Wolfradt et al., 2003; Zeevi-Cousin & Lavenda, 2023). In the present study, the absence of a significant relationship at the level of parenting style subdimensions implies that the effect of parenting may be indirect and limited rather than direct and strong. On the other hand, the absence of a significant relationship may be attributable to the fact that the sample largely consisted of individuals exhibiting positive parenting styles. This situation may have restricted the variance in the parenting variable. In the literature, this phenomenon is referred to as "range restriction," which may reduce correlation coefficients and cause relationships between variables to appear weak or non-significant (Quinn McNemar, 1969, as cited in Baron & Kenny, 1986). Therefore, the present findings should not necessarily be interpreted as evidence for the absence of such relationships, but rather as a possible reflection of a methodological limitation.

In the present study, the results of the mediation analysis revealed that creative thinking disposition does not play a significant mediating role in the relationship between parenting styles and perceived stress. These findings also indicate that parenting style does not have a significant effect on creative thinking. It can be argued that this result differs from those reported in the literature. Studies demonstrating that parenting styles or parental attitudes are significant predictors of creative thinking skills (Deng et al., 2023; Dong et al., 2022; Fan & Zhang, 2014; Kaya et al., 2012; Wang et al., 2023; Zhao & Yang, 2021) generally involve samples consisting of middle school, high school, or university students. In contrast, studies including primary school students remain limited in number. In the meta-analysis conducted by Fan and colleagues (2024), which included students ranging from preschool to university level, a small but statistically significant positive correlation was found between

parental involvement and student creativity. On the other hand, Li and Li (2025), in a large-scale study involving 10- and 15-year-old Chinese students, found that the quality of parent-child relationships did not exert a significant direct effect on students' self-reported creativity, suggesting that parental relational support may shape creative development primarily through indirect psychological pathways rather than through direct influence. In the present study, however, students were found to exhibit high levels of creative thinking, and these levels appeared to emerge independently of parenting style. This finding suggests that creative thinking may be understood as a dynamic and socially grounded competence shaped not only by the family environment but also by the quality of learning experiences. Consistent with this interpretation, the literature provides evidence that school environments and pedagogical approaches play a decisive role in the development of creative thinking among primary school children (Fauzi & Wuryandani, 2025; Işık & Uysal, 2015; Xu et al., 2026). In a comprehensive systematic review and bibliometric analysis of 204 Scopus-indexed articles published between 2014 and 2024, Fauzi and Wuryandani (2025) demonstrated that creative thinking in primary education is fostered through constructivist, inquiry-based STEM, arts-integrated, and digital-hybrid pedagogical approaches.

It is also noteworthy that creative thinking did not have a significant effect on perceived stress. Russ (2014) suggest that creative thinking can facilitate individuals' coping processes and enhance emotional flexibility. However, this protective effect is reported to be more evident particularly among adolescents or adults whose cognitive development has largely matured. Coping in primary school-aged children is considered a developmental process that involves conscious and voluntary efforts to regulate emotion, cognition, and behavior (Compas et al., 2001). Within this framework, since these regulatory capacities develop gradually throughout childhood, it can be argued that children in the primary school period may not yet have fully developed the cognitive self-regulation skills necessary to use their creative thinking dispositions as functional and deliberate coping strategies. Accordingly, it can be suggested that the link between creative thinking disposition and stress management has not yet fully matured in this age group.

The results of the mediation analysis also revealed that critical thinking disposition does not play a significant mediating role in the relationship between parenting styles and perceived stress. This finding indicates that there is no significant association between parenting styles and critical thinking, and therefore, the fundamental condition required for a mediation effect is not met. This result appears to differ from findings

reported in the literature (Deng et al., 2023; Wang et al., 2020; Yurt & Kara, 2025). Deng et al. (2023), in a study conducted with primary school students, found that parenting styles were significantly associated with critical thinking dispositions, and longitudinal analyses showed that parenting styles predicted these dispositions over time. In the present study, although students were found to have high levels of critical thinking disposition, the lack of a significant effect of parenting styles suggests that school-based practices may play a more influential role in the development of this disposition and related skills. Consistent with this interpretation, the literature indicates that practices such as reading, research-oriented and inquiry-based instructional methods, as well as school climate, are effective in fostering these skills (Dimaç & Dılmaç, 2020; Gómez & Suárez, 2020; Karataş & Özcan, 2015; Oğuz & Aybek, 2024; Türkdoğan & Özgenel, 2021; Yılmaz, 2025). Yıldırım Döner and Demir (2022) also emphasize that both family environment and school- and teacher-related factors should be considered among the determinants of critical thinking disposition. They suggest that parental attitudes at home may influence the extent to which individuals can express themselves, while teachers and schools contribute to the development of this disposition by creating classroom environments that support critical thinking.

The finding of the present study that critical thinking does not have a reducing effect on children's perceived stress appears to be consistent with the results reported by Arıbaş and Oğuzhan (2024). In their study conducted with university students, Arıbaş and Oğuzhan (2024) found a negative but weak relationship between critical thinking and perceived stress; however, regression analyses indicated that critical thinking did not significantly predict perceived stress levels. These findings suggest that the relationship between critical thinking and perceived stress remains weak and limited. On the other hand, Arrivillaga et al. (2022) reported a negative relationship between critical thinking and perceived stress. In the present study, the absence of a significant relationship between children's critical thinking dispositions and perceived stress may be attributed to developmental characteristics specific to this age group. According to Halpern (2014), critical thinking encompasses higher-order cognitive processes such as tolerance for ambiguity, flexibility, self-regulation, and complex problem-solving. These processes can be considered to still be in the process of maturation during the primary school period. Lazarus and Folkman (1984), in their stress and coping model, identified cognitive reappraisal as one of the most effective strategies for managing stressful situations. Critical thinking skills may also be associated with cognitive reappraisal processes (as cited in Folkman, 2013). However, in coping with perceived stress, children tend to rely more on externally oriented strategies rather than

cognitive evaluations. Yıldırım Döner and Demir (2022) also include age level among the factors influencing critical thinking disposition and, drawing on Piaget (2019), emphasize that perceptual activities and related thinking skills develop both quantitatively and qualitatively with age. Coping strategies also change developmentally. Goodman and Thompson (2010) indicate that cognitively based coping strategies, such as cognitive reappraisal, begin to be used effectively during middle childhood; prior to this period, children tend to rely primarily on behavioral strategies such as seeking social support, avoidance, or distraction when dealing with stressful situations (as cited in Compas et al., 2020). In addition, it should be taken into consideration that the scales used in the study measured dispositions toward creative and critical thinking rather than directly assessing performance-based indicators of thinking. It may therefore be argued that, in order to function as a mediating factor in reducing stress in a meaningful way, such dispositions need to be translated into actual behaviors and active coping strategies.

The serial mediation analysis conducted in the study revealed that creative and critical thinking dispositions, even when considered jointly, do not play a significant mediating role in the relationship between parenting styles and perceived stress. This finding is consistent with the results obtained in the previous sub-objectives and indicates that the proposed mediation mechanism does not operate even when both thinking dispositions are included simultaneously. Based on this result, it can be suggested that creative and critical thinking dispositions are shaped by multiple determinants. In other words, these thinking dispositions cannot be considered unidimensional constructs that can be explained solely by parenting characteristics, nor are they sufficient on their own to transmit the effects of parenting styles to stress outcomes.

Implications

The findings of the study revealed that although students exhibit high levels of creative and critical thinking dispositions, these dispositions do not function effectively in stress management. This may indicate that such skills are addressed in school settings primarily within the scope of academic achievement. Designing instructional activities aimed at developing these skills in a way that also encompasses emotional regulation, coping strategy development, and self-awareness may facilitate the integration of thinking dispositions into everyday life. From the perspective of parenting style, it is noteworthy that although the majority of parents in the sample demonstrated positive parenting styles, proactive parenting was observed at a very limited rate. In this regard, it is recommended that family education programs

organized in schools introduce this approach through concrete examples, and that teachers and school counselors share strategies during parent meetings that support preparing children for potential future challenges. On the other hand, considering the finding that the effect of parenting style on student stress is limited, school-based stress reduction interventions may yield more effective outcomes if implemented from an integrated perspective that extends beyond parenting styles to include school climate, teacher-student relationships, and peer interactions.

Since the present study is limited to the primary school level, testing similar models with middle and high school students is expected to allow for a comparative examination of the relationships among parenting styles, thinking dispositions, and perceived stress from a developmental perspective. The findings indicated that the effect of parenting style on stress is limited and indirect; therefore, future research may explore the potential mediating or moderating roles of variables such as emotional regulation, self-efficacy, and peer relationships. However, the cross-sectional design employed in this study restricts the ability to establish causal relationships. The use of longitudinal or experimental designs may enable a more robust examination of the relationships among variables within a causal framework.

Conclusion

This study examined the mediating roles of creative and critical thinking dispositions in the relationship between parenting styles and perceived stress among primary school students. The findings revealed that students' perceived stress levels were at a low-to-moderate level, while their creative and critical thinking dispositions were at a high level. Parenting style was found to have a statistically significant but small effect on perceived stress. Mediation analyses indicated that there was no significant mediating effect for creative thinking, critical thinking, or the serial mediation model in which both variables were considered together. Overall, the study provides important evidence emphasizing that the factors influencing stress in primary school children should be addressed within a multidimensional and developmental framework.

AI Disclosure Statement

The authors confirm that no artificial intelligence tools were used at any stage of the study.

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