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Original Research

Parenting Stress and Life Satisfaction in Parents of Children With Special Needs: Mediating Role of Parenting Burnout and Moderating Effect of Marital Satisfaction

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Abstract

Background: Raising and caring for children with special needs places significant stress on parents, seriously affecting their life satisfaction as well as their physical and mental health. Because the underlying mechanisms remain unclear, the aim of the present study was to explore the mediating role of parenting burnout and the moderating role of marital satisfaction in the relationship between parenting stress and life satisfaction. **Methods**: We conducted a survey of 283 parents of children with special needs in Guangdong, China, using the Parenting Stress Index-Short Form, the Parental Burnout Assessment, the Satisfaction with Life Scale, and the Marital Satisfaction Scale. **Results**: After controlling for demographic factors, parenting stress negatively predicted life satisfaction and positively predicted parenting burnout. Parenting burnout negatively predicted life satisfaction. Marital satisfaction moderated the relationship between parenting stress and parenting burnout, with the negative effect of parenting stress on parenting burnout gradually diminishing as marital satisfaction increased. **Conclusions**: Parenting stress among parents of children with special needs negatively predicts their life satisfaction, with parenting burnout playing a partial mediator role and marital satisfaction as a moderator. Therefore, future prevention and intervention efforts aimed at improving the life satisfaction of parents of children with special needs should be directed at parenting stress, parenting burnout, and marital satisfaction.

Keywords: parents of children with special needs; parenting stress; life satisfaction; parenting burnout; marital satisfaction

1. Introduction

Parents play a pivotal role in special education, serving as both the initial teachers and rehabilitation trainers for children with special needs. Their involvement in the early learning and comprehensive development assessment of these children is crucial (Harbin et al., 2024), providing enduring (even lifelong) and steady support for their growth and rehabilitation (Beighton and Wills, 2017). However, the task of raising and caring for children with special needs presents significant challenges for parents, profoundly impacting their life satisfaction and physical and mental well-being (Hoyle et al., 2021; Shivers and Resor, 2020).

Life satisfaction is an individual's cognitive evaluation of their own life (Antoniadou, et al., 2025). It is a vital component of human happiness and health (Carr, 2008) and serves as an indicator of health and psychopathology (Proctor et al., 2009). When the parents of children with special needs (PCSN) experience unhappiness and dissatisfaction with their lives, it not only affects their own mental health but also hinders healthy development of the children, given their crucial role in the upbringing of these children. Therefore, it is imperative to investigate the factors influencing the life satisfaction of PCSN and to identify the underlying mechanisms. This study aims to provide empirical evidence for enhancing the life satisfaction of such parents, ultimately contributing to the overall well-being of both parents and children.

1.1 Parenting Stress and Life Satisfaction

Parenting inherently introduces new demands that carry the risk of stress. According to the parenting stress theory (Deater-Deckard, 1998), when the demands of the parental role exceed the available resources to fulfill this role, parents may experience distress or discomfort, which is termed parenting stress. Parenting stress is a significant aspect of parent-child relationship development and an important risk factor affecting the physical and mental health of both parents and children (Hong and Liu, 2020).

Due to their condition, children with special needs impose higher demands on the parenting and financial capabilities of parents, requiring continuous investment of time, energy, and resources. These children often exhibit slower physical and mental development and have behavioral and emotional disorders (Barroso et al., 2018). Consequently, they seldom provide positive feedback to their parents, posing a substantial challenge and increasing parenting stress (Fu et al., 2023). The parenting stress theory further suggests that the impact of this stress on the overall mental health of parents is more prevalent than its effect on their

children's mental health. Numerous studies have demonstrated that the stress of raising children with special needs elevates their parents' susceptibility to illness and unhealthy conditions (Miodrag and Hodapp, 2011), including depression and anxiety (Sakkalou et al., 2018). These conditions adversely affect the long-term happiness of PCSN and serve as crucial predictors of their life satisfaction (Emam et al., 2023).

Given this background, we propose hypothesis 1: Parenting stress negatively predicts the life satisfaction of PCSN.

1.2 The Mediating Role of Parenting Burnout

Parenting stress is generated when the demands of the parental role exceed the actual parenting resources. According to the "Balance between Risks and Resources Theory", a prolonged imbalance between parenting needs and resources can lead to parenting burnout, which is a distinct syndrome resulting from chronic exposure to parenting stress (Mikolajczak and Roskam, 2018). This encompasses emotional exhaustion, emotional distance, feeling fed up with one's parental role, and a painful feeling of contrast (Roskam et al., 2018; Roskam et al., 2022). A study has highlighted parenting burnout as a critical area for further research, as it affects 0.2%–20% of parents and impacts children's health, and the parent's health and work (Paula et al., 2022).

Parenting stress is a key factor influencing parenting burnout (Zhang et al., 2019). When factors that increase parenting stress outweigh those that alleviate it, parenting burnout can ensue. Raising children with special needs significantly increases parenting risks, disrupts the balance between risk and resources (Roskam and Mikolajczak, 2023), and exposes parents to greater parenting stress, making them more prone to parenting burnout (Zhang et al., 2019). Parents who experience parenting burnout can face severe consequences (Mikolajczak et al., 2019), including serious damage to their physical and mental health due to increased guilt, avoidance, and suicidal thoughts, as well as decreased well-being, self-esteem, and life satisfaction (Mikolajczak et al., 2023). Previous research on the parents of children with disabilities has shown that parenting burnout negatively predicts their life satisfaction (Aktan et al., 2020). Moreover, real-life problems such as quality of life do not directly predict life satisfaction, but rather through the mediating role of burnout.

Based on these findings, we propose hypothesis 2: Parenting burnout mediates the relationship between parenting stress and the life satisfaction of PCSN.

1.3 The Moderating Effect of Marital Satisfaction

Although raising children with special needs can impose significant parenting stress, the negative effects of this stress are not always apparent (Beighton and Wills, 2017; Shenaar-Golan, 2017), with moderating variables sometimes playing a role. Research on the impact of stress on poor parenting practices (such as abuse) has indicated that both protective and risk factors moderate this relationship (Ajduković et al., 2018). Protective factors can mitigate the negative effects of stress, while risk factors exacerbate them.

Marital satisfaction refers to an individual's subjective assessment of the overall quality of their marital relationship, including the extent to which their needs, expectations, and desires are fulfilled (Ronaghan et al., 2024). According to family systems theory and its spillover effects, the family comprises a series of complex and interacting subsystems (Minuchin, 1985), where issues in the parent subsystem can spill over and affect other systems (White, 1999). Marital satisfaction is a key element in the spouse subsystem, and harmony within this subsystem promotes normal family functioning, as distinct from the parent subsystem in divorced or reorganized families (Minuchin, 1985). Family system theory also emphasizes that problems arising in the parent-child(ren) subsystem, such as parenting issues (Johnson, 2015), are often linked to marital discord. Addressing parent-child(ren) problems often begins with resolving marital issues (Cox and Paley, 2003). A previous study has shown that marital satisfaction moderates the relationship between parenting stress and poor parenting behavior (Liu and Wang, 2015). Furthermore, support from spouses or partners can protect parents from the negative effects of their children's serious illness (Deater-Deckard, 1998).

Thus, marital satisfaction may serve as a protective factor, reducing the negative impact of parenting stress on parental burnout in PCSN. Consequently, we propose hypothesis 3: Marital satisfaction moderates the relationship between parenting stress and parental burnout.

In summary, this study constructs a moderated mediation model to investigate the roles of parenting burnout and marital satisfaction on the relationship between parenting stress and life satisfaction among PCSN. The aim is to provide insights and recommendations for improving the life satisfaction of these parents. In the proposed model, parenting stress influences the life satisfaction of PCSN, parenting burnout mediates this relationship, and marital satisfaction moderates the first stage of the mediation model by moderating the effect of parenting stress on parenting burnout.

2. Materials and Methods

2.1 Participants

This study selected 300 PCSN from Guangdong Province, China. After removing duplicate answers and extreme values, 283 valid questionnaires were collected, with a recovery rate of 94.33%. The study cohort comprised 80 males (28.3%) and 203 females (71.7%), with 8 participants aged 20–30 (2.8%), 147 aged 31–40 (51.9%), 108 aged 41–50 (38.2%), and 20 aged >50 (7.1%). Details of other relevant information on the participants and their special needs child are presented in Table 1.

Table 1. Basic information on the participants and child.

Demographic information	Classification	Frequency	Percentage
Residence	urban area	130	45.9%
	rural area	153	54.1%
Family type	core family	148	52.3%
	stem family	101	35.7%
	single parent family	34	12.0%
Education background	primary school or below	46	16.3%
	junior high school	133	47.0%
	senior high school	55	19.4%
	university and above	49	17.3%
Family monthly income	<3000 yuan	139	49.1%
	3000–6000 yuan	99	35.0%
	6000–10,000 yuan	28	9.9%
	>10,000 yuan	17	6.0%
Child's gender	male	193	68.2%
	female	90	31.8%
Is the child an only child?	yes	42	14.8%
	no	241	85.2%
The child's type of disease	mental retardation	118	41.7%
	autism	77	27.2%
	cerebral palsy	11	3.9%
	hearing disability	37	13.1%
	Down syndrome	22	7.8%
	other disease	18	6.4%
Severity of the child's disease	mild	45	15.9%
	moderate	111	39.2%
	severe	127	44.9%
Child's place of residence	campus	87	30.7%
	non-residential	196	69.3%
Length of child's education	1 year or less	21	7.4%
	1 to 3 years	66	23.3%
	3 to 6 years	92	32.5%
	6 years or more	104	36.7%

N = 283. N, number of samples. As of 15 May 2026, the exchange rate between the US dollar and the Chinese yuan stood at 1 USD = 6.81 CNY.

2.2 Measures

2.2.1 Parenting Stress Index/Short Form (PSI/SF)

This study used a simplified parenting stress scale developed by Abidin and translated and revised by Jen (1995). The scale consists of 36 questions divided into three dimensions: parenting pain, dysfunctional parent-child interaction, and difficult children. The Likert 5-point scoring method is used, and the higher the score, the greater the parenting stress felt by the parents. Cronbach's alpha coefficient for this scale was 0.96 in the present study. The results of confirmatory factor analysis were: root mean square error of approximation (RMSEA) = 0.078, comparative fit index (CFI) = 0.828, Tucker-Lewis index (TLI) = 0.816, standardized root mean square residual (SRMR) = 0.063, χ^2/df = 2.742.

2.2.2 Parental Burnout Assessment (PBA)

This study used the Parent Nurturing Burnout Scale developed by Roskam et al. (2018), which consists of 23 items. The Likert 5-point scale includes four dimensions: exhaustion in one's parental role, contrast with previous parental self, feelings of being fed up with one's parental role, and emotional distancing from one's children. The higher the score, the higher the degree of parenting burnout. Cronbach's alpha coefficient for this scale was 0.97 in the present study. The results of confirmatory factor analysis were: RMSEA = 0.107, CFI = 0.872, TLI = 0.856, SRMR = 0.055, χ^2/df = 4.213.

2.2.3 Satisfaction With Life Scale (SWLS)

The measurement of life satisfaction was conducted using the Life Satisfaction Scale developed by Diener et al. (1985). This single dimensional scale consists of 5 items scored on a 7-level scale. The higher the score, the more the individual is satisfied with their life. Cronbach's alpha coefficient for this scale was 0.89 in the present study. The results of confirmatory factor analysis were: RMSEA = 0.110, CFI = 0.981, TLI = 0.963, SRMR = 0.023, χ^2/df = 4.404.

2.2.4 Marital Satisfaction Scale

The Marital Satisfaction Scale is a subscale of the Enrich Marital Inventory developed by Fowers and Olson (1989). The scale has good reliability and validity and was used here to evaluate the marital satisfaction status of participants. It consists of 10 questions (5 with positive scoring and 5 with reverse scoring) scored on a five-point scale. The higher the score, the more satisfied the participant is with their marriage. Cronbach's alpha coefficient for this scale was 0.88 in the present study. The results of confirmatory factor analysis were: RMSEA = 0.063, CFI = 0.976, TLI = 0.968, SRMR = 0.034, χ^2/df = 2.123.

In general, the scales have good reliability and acceptable structural validity.

2.3 Analysis

SPSS 26.0 (IBM Corporation, Armonk, NY, USA) was used for data input and processing. First, Cronbach's alpha coefficient and confirmatory factor analyses were conducted to verify the reliability and validity of each scale, as detailed in the above description of scales. Subsequently, Harman's single factor test was performed to assess common method bias. Descriptive statistics were then conducted, with Pearson correlation analysis applied to evaluate correlations. The bootstrap mediation effect and moderated mediation effect were analyzed using Process 3.0.

Before using Process to test the research hypotheses, the normality of two outcome variables was verified through Probability-probability Plot, homoscedasticity of residual variables was confirmed via scatter plots, and multicollinearity of independent variables was examined using variance inflation factor (VIF) values. With Life Satisfaction and Parenting Burnout as the outcome variables respectively, the Probability-probability Plots showed that scattered points corresponding to the sample data basically fall near the 45° line originating from the origin, indicating a normal distribution for both outcome variables. The scatterplots of the residuals for the two outcome variables reveal a uniform distribution of points, suggesting the residuals exhibit homoscedasticity. The VIF values for the independent and control variables ranged from 1.070 to 4.481, and from 1.085 to 4.493, respectively. Since the values are both <5, this indicates absence of multicollinearity among the independent variables.

3. Results

3.1 Common Method Bias

Due to the self-assessment format of data collection in this study, the relationship between the objective environment and the dimensions of the questionnaire may produce common methodological bias. Therefore, prior to analysis of the data, all scale items within the questionnaire were tested using Harman's single factor test (Podsakoff et al., 2003). The results showed that 12 factors had Eigen roots >1, with the largest factor variance explained at 33.814%, which was less than the critical value of 50% (Ahamed, 2025). Hence, no significant common method bias was found in this study.

3.2 Descriptive Statistics and Correlation Analysis

Descriptive statistics and correlation analysis were conducted on the variables, with some demographic variables recoded as dummy variables. Statistically significant pairwise correlations were found between parenting stress, parenting burnout, marital satisfaction, and life satisfaction. Parenting stress was positively correlated with parenting burnout ($r = 0.517$, $p < 0.001$), and negatively with marital satisfaction ($r = –0.465$, $p < 0.001$) and life satisfaction ($r = –0.513$, $p < 0.001$). Parenting burnout was negatively correlated with marital satisfaction ($r = –0.448$, $p < 0.001$) and life satisfaction ($r = –0.541$, $p < 0.001$). A significant positive correlation was found between marital satisfaction and life satisfaction ($r = 0.539$, $p < 0.001$). The variables of family monthly income, child's type of disease, child's severity of disease, and Child's place of residence were significantly associated with the outcome variable and were therefore included as control variables in the subsequent analysis. The detailed results are shown in Table 2.

3.3 The Mediating Role of Parenting Burnout

Model 4 in the SPSS macro program PROCESS was used to test the mediating role of parenting burnout. As shown in Table 3, after controlling for demographic variables, a significant total effect of parenting stress on life satisfaction was observed ($\beta = –0.477$, $t = –9.038$, $p < 0.001$). Following introduction of the mediator variable (parenting burnout), parenting stress continued to be a negative predictor of life satisfaction ($\beta = –0.295$, $t = –5.259$, $p < 0.001$). Parenting stress was a positive predictor of parenting burnout ($\beta = 0.491$, $t = 9.217$, $p < 0.001$), while parenting burnout was a significant negative predictor of life satisfaction ($\beta = –0.370$, $t = –6.641$, $p < 0.001$). These results suggest that parenting burnout partially mediates the negative effects of parenting stress on life satisfaction. The results of bootstrap analysis were: indirect effect = –0.182, 95% CI: [–0.254, –0.121]. Since the confidence interval does not contain 0, the mediating effect is significant. Therefore, these results support hypotheses 1 and 2.

Table 2. Descriptive and correlation analyses of the variables.

Variables	Mean	SD	2	3	4	5	6	7	8	9	10	11	12
1 Parenting Stress	3.062	0.742	0.517***	–0.465***	–0.513***	–0.076	0.054	–0.050	–0.164**	–0.001	0.106	0.129*	0.075
2 Parenting Burnout	3.190	1.663	1	–0.448***	–0.541***	–0.133*	0.053	0.010	–0.131*	–0.065	0.064	0.090	0.072
3 Marital Satisfaction	3.344	0.893		1	0.539***	0.187**	0.031	0.113	0.142*	0.005	–0.187**	–0.073	–0.079
4 Life Satisfaction	3.860	1.561			1	0.089	–0.012	–0.022	0.142*	–0.013	–0.106	–0.126*	–0.195**

N = 283. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. Mean and SD represent the mean and standard deviation of the participants' scores (total score divided by the number of items) across the different scales. Parenting Stress range: 1–5; Parenting Burnout range: 1–7, Marital Satisfaction range: 1–5; Life Satisfaction range: 1–7. Variables: 5, Family monthly income; 6, Disease (mental retardation); 7, Disease (autism); 8, Disease (cerebral palsy); 9, Disease (hearing disability); 10, Disease (Down syndrome); 11, Severity of disease; 12, Child's place of residence. Variables 5 to 12 are demographic variables. Variables 6 to 10 are coded as dummy variables. The correlations between all demographic variables and research variables were calculated. Only the demographic variables that showed significant correlations with the outcome variable are presented in the table. These variables were controlled for in the subsequent analyses. Due to space constraints, the remaining demographic variables that did not correlate with the outcome variable are not presented here.

Table 3. Results of the mediation model.

Variables	PB			LS		
	β	SE	t	β	SE	t
Constant	0.165	0.273	0.606	0.585	0.252	2.327*
PS	0.491	0.053	9.217***	–0.295	0.056	–5.259***
PB	/	/	/	–0.370	0.056	–6.641***
Family monthly income	–0.121	0.060	–2.008*	0.023	0.056	0.411
Disease (mental retardation)	–0.086	0.229	–0.375	–0.190	0.211	–0.898
Disease (autism)	0.073	0.330	0.221	–0.404	0.304	–1.331
Disease (cerebral palsy)	–0.362	0.267	–1.355	–0.182	0.247	–0.737
Disease (hearing disability)	–0.379	0.277	–1.365	–0.404	0.256	–1.575
Disease (Down syndrome)	–0.134	0.218	–0.614	–0.311	0.202	–1.544
Severity of disease	0.086	0.079	1.081	–0.070	0.073	–0.964
Child's place of residence	0.001	0.117	0.010	–0.306	0.108	–2.830**
	$R^2 = 0.290$, $F(9273) = 12.378$***			$R^2 = 0.399$, $F(10,272) = 18.062$***		
	Effect/Index	Boot SE	t	p	LLCI	ULCI
Mediation Model (Total, direct and indirect effects)						
Total	–0.477	0.053	–9.038	<0.001	–0.581	–0.373
Direct	–0.295	0.056	–5.259	<0.001	–0.406	–0.185
Indirect	–0.182	0.034	/	/	–0.254	–0.121

N = 283. The reference groups for the dummy variables were all cases other than the ones in parentheses. Bootstrap analysis, employing repeated sampling (N = 5000), generates empirical distributions of the effects and the 95% CI. If the interval does not contain zero, the effect is statistically significant. PB, parenting burnout; PS, parenting stress; LS, life satisfaction; LLCI, lower limit of confidence interval; ULCI, upper limit of confidence interval; SE, standard error. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

3.4 The Moderated Mediation Model

Model 7 in the SPSS macro program PROCESS was used to test the moderated mediation model. After controlling for demographic variables, the interaction term between parenting stress and marital satisfaction was a significant predictor of parenting burnout (β = –0.206, t = –3.863, $p < 0.001$) (Table 4 and Fig. 1). This result suggests that marital satisfaction moderated the relationship between parenting stress and parenting burnout, thus supporting hypothesis 3.

As shown in Fig. 2, simple slope analysis revealed that the positive predictive effect of parenting stress on parenting burnout was stronger when the level of marital satisfaction was lower ($\beta = 0.577$, $t = 7.696$, $p < 0.001$), and weaker when it was higher ($\beta = 0.166$, $t = 2.111$, $p < 0.05$). In summary, the effect of parenting stress on parenting burnout

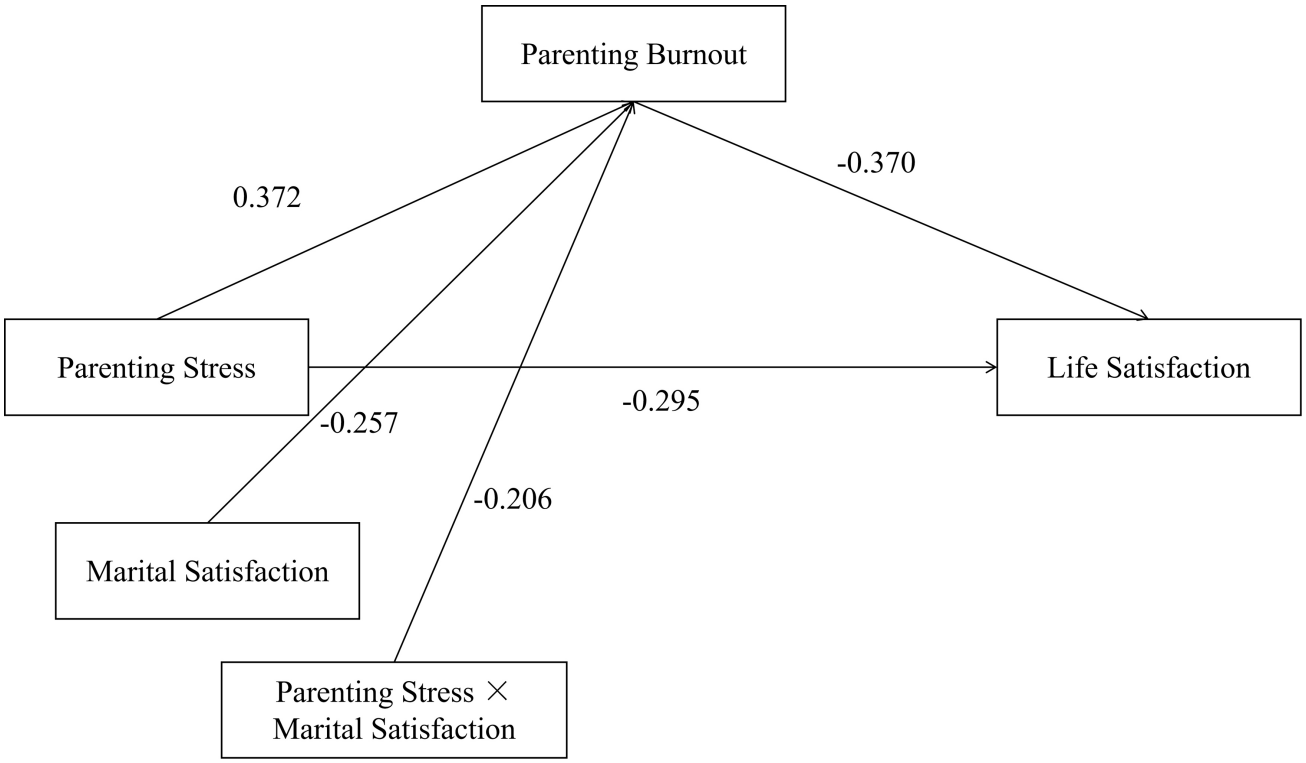

Fig. 1. Statistical model.

Table 4. Results of moderated mediation model.

Variables	PB			LS		
	β	SE	*t*	*β*	SE	*t*
Constant	0.137	0.257	0.531	0.585	0.252	2.327*
PS	0.372	0.056	6.701***	–0.295	0.056	–5.259***
PB	/	/	/	–0.370	0.056	–6.641***
MS	–0.257	0.056	–4.578***	/	/	/
PS × MS	–0.206	0.053	–3.863***	/	/	/
Family monthly income	–0.086	0.058	–1.488	0.023	0.056	0.411
Disease (mental retardation)	–0.080	0.216	–0.371	–0.190	0.211	–0.898
Disease (autism)	0.092	0.312	0.294	–0.404	0.304	–1.331
Disease (cerebral palsy)	–0.284	0.252	–1.128	–0.182	0.247	–0.737
Disease (hearing disability)	–0.378	0.261	–1.447	–0.404	0.256	–1.575
Disease (Down syndrome)	–0.193	0.206	–0.933	–0.311	0.202	–1.544
Severity of disease	0.033	0.075	0.442	–0.070	0.073	–0.964
Child's place of residence	0.007	0.111	0.067	–0.306	0.108	–2.830**
	R^2 = 0.374, F(11,271) = 14.716***			R^2 = 0.399, F(10,272) = 18.062***		
	Effect/Index	Boot SE	t	*p*	LLCI	ULCI
Moderated Mediation Model (conditional indirect effects of MS)						
Low MS	–0.214	0.039	/	/	–0.298	–0.144
Mean MS	–0.138	0.028	/	/	–0.198	–0.087
High MS	–0.062	0.033	/	/	–0.126	0.006
Index of moderated mediation	0.076	0.023	/	/	0.039	0.127

N = 283. The reference groups for the dummy variables were all cases other than the ones in parentheses. Low = 1 SD below the mean; High = 1 SD above the mean. Bootstrap analysis, employing repeated sampling (N = 5000), generates empirical distributions of the effects and the 95% confidence interval. If the interval does not contain zero, the effect is statistically significant. MS, Marital Satisfaction. *p < 0.05, **p < 0.01, ***p < 0.001.

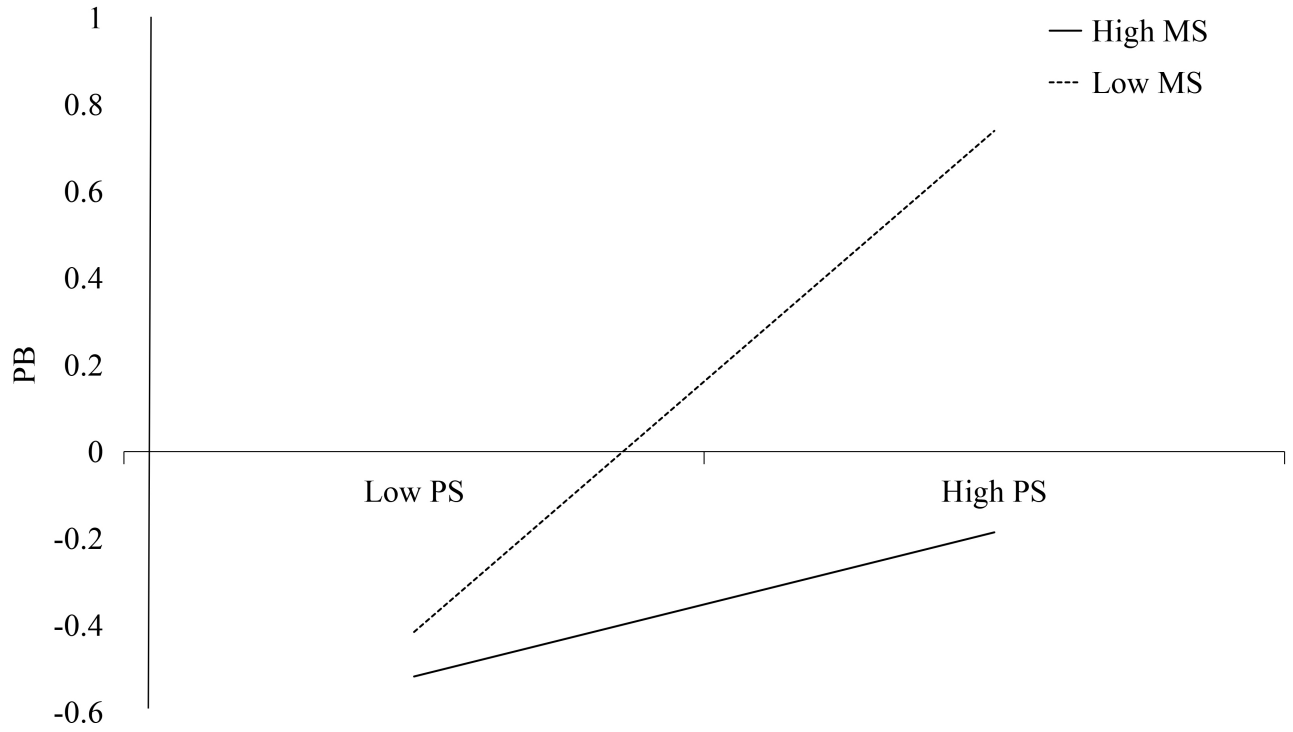

Fig. 2. Interaction of parenting stress and marital satisfaction on parenting burnout. Low = 1 SD below the mean, High = 1 SD above the mean.

gradually weakened as the moderating variable (marital satisfaction) increased.

Finally, bootstrap analysis revealed the mediating effect was moderated by marital satisfaction (see Table 4). Specifically, the indirect effect of parenting burnout at a high level of marital satisfaction (+1 SD from the mean) was –0.062 (95% CI: [–0.126, 0.006]). Since the confidence interval includes 0, the indirect effect was not significant. In contrast, the indirect effect of parenting burnout at a low level of marital satisfaction (–1 SD from the mean) was –0.214 (95% CI: [–0.298, –0.144]), and grew stronger and more significant. The overall index was also significant for moderated mediation (Index = 0.076, 95% CI: [0.039, 0.127]).

4. Discussion

This study explored the mechanism of parenting stress on the life satisfaction of PCSN based on the parenting stress theory, Risks and Resources Theory, and family system theory. In addition, we constructed a moderated mediation model. The results indicate that parenting stress not only directly and negatively affects the life satisfaction of PCSN, it also indirectly affects life satisfaction through parenting burnout. Marital satisfaction plays a moderating role in the first half of the mediation model, thereby alleviating the impact of parenting stress on parenting burnout in PCSN.

4.1 The Relationship Between Parenting Stress and Life Satisfaction

This study found that parenting stress can directly and negatively predict the life satisfaction of PCSN. The greater the parenting stress, the lower the life satisfaction of PCSN, thereby supporting hypothesis 1.

Previous studies have shown that raising a special needs child can bring enormous stress to parents, and that parenting stress can have adverse effects on the lives and mental health of parents (Darling et al., 2012; Miodrag et al., 2015; Souza-Silva et al., 2021). The results of the current study are similar to those of previous research, as they show parenting stress can have a negative impact on the life satisfaction of PCSN. In order to improve the life satisfaction of PCSN, the results of our study suggest that efforts should be focused on the alleviation of parenting stress. All parents experience parenting stress to varying degrees as a normal event (Deater-Deckard, 1998). However, when the needs of parental roles exceed actual resources, parents can experience pain or discomfort. Therefore, extra resources are needed for PCSN so they can acquire the knowledge and skills needed to raise such children with less parenting stress, thereby improving their life satisfaction (Emam et al., 2023). Some studies have also shown that mindfulness training (Rayan and Ahmad, 2018) and parental training measures (Yildirim et al., 2020) can help to alleviate the parenting stress and pain of PCSN, thus improving their life satisfaction.

4.2 The Mediating Role of Parenting Burnout

The present study found that parenting burnout plays a mediating role between parenting stress and the life satisfaction of PCSN. Parenting stress not only directly reduces the life satisfaction of PCSN, but also indirectly lowers their life satisfaction by increasing the level of parenting burnout, thus verifying hypothesis 2.

Previous studies have shown that perceived stress can lead to parenting burnout in PCSN (AKTU, 2024; Findling et al., 2023), and that parenting burnout can have a negative impact on the life satisfaction of PCSN (Aktan et al., 2020). The results of the current study agree with these findings, while also providing cross-cultural evidence for the burnout-mediated mechanism proposed by Aktan et al. (2020). Our results indicate that parenting burnout mediates the relationship between parenting stress and life satisfaction among PCSN. The key to addressing parenting burnout is to address the imbalance between parenting needs and resources (Mikolajczak and Roskam, 2018). On one hand, it can enhance social support to prevent parenting burnout (Zhang et al, 2025). Government and community services can provide more emotional and material support to PCSN in order to increase their parenting resources. Other family members and the wider community should also recognize the difficulty of raising a child with special needs and offer encouragement and assistance to the parents, while avoiding unconstructive criticism (Yu and He, 2022). On the other hand, psychological and educational interventions can effectively and sustainably reduce parenting burnout (Urbanowicz et al., 2026). PCSN can proactively acquire relevant knowledge and skills, or seek assistance from professionals and institutions to enhance their psychological adaptability and parenting competencies, thereby alleviating parenting burnout.

4.3 The Moderating Effect of Marital Satisfaction

This study found that marital satisfaction regulates the first half of the path from parenting stress, to parenting burnout, to life satisfaction. The increase in marital satisfaction can alleviate the adverse effects of parenting stress on parenting burnout, thus supporting hypothesis 3.

Family systems theory provides theoretical support for the moderating effects of marital satisfaction. In addition, articles on parenting stress theory also clearly point out that marital satisfaction reduces the link between parenting stress and parenting behaviors. Poor parenting behaviors, such as less proactive social interactions with the child, more authoritative and harsh parenting (Conger et al., 2010), and neglecting or abusing the child (Ajduković et al., 2018) are consequences of parenting stress. These are precisely the externalization of parenting burnout behavioral symptoms. The results of this study provide empirical evidence that marital satisfaction mitigates the negative effects of parenting stress on parenting burnout.

In China, the formation of good marital relations and encouragement of the fathers' active participation in their children's co-education help to increase parenting inputs for optimal functioning of the family system (Chen et al., 2014). However, the main caregiver of children is still their mother, and many mothers bear the stress of work as well as raising their children. This can seriously affect the physical and mental health of caregivers, as well as the maintenance of good parenting behavior (Zhang et al., 2023). A recent Portuguese study found that while the diagnosis of children with special educational needs showed no direct correlation with parental marital stability or flexibility, mothers experienced significantly higher stress levels than fathers. The authors suggest that interventions for children with special education needs should prioritize measures to strengthen the parents' marital relations (Figueiredo and Pereira, 2025). Therefore, measures should be taken to establish or maintain good marital satisfaction between PCSN, sharing and negotiating the distribution of family responsibilities, and supporting and encouraging each other. This should effectively alleviate the parenting burnout arising from the stress of raising children with special needs, and subsequently increase their life satisfaction.

4.4 Contributions

Theoretically, validation of a moderated mediation model in the Chinese context should improve the cross-cultural understanding of factors influencing parents' life satisfaction. Previous studies have explored burnout and marriage in Western or other Asian populations (Aktan et al., 2020; Figueiredo and Pereira, 2025), but few have focused on families in China. By confirming that parenting burnout partially mediates the effect of stress on life satisfaction, and that marital satisfaction buffers the stress-burnout link, this study extends the relevant theory to parents of special children in non-Western cultural backgrounds.

Practically, it suggests targeted areas for improving the well-being of parents. Interventions should address three issues: (1) reducing parenting stress via resource support; (2) alleviating burnout via psychological interventions; and (3) enhancing marital satisfaction via relationship counseling. Additionally, the study's focus on gender imbalance can inform policy, for example, by promoting the father's involvement in caregiving via public campaigns or workplace flexibility policies.

4.5 Limitations

Several limitations in this study must be acknowledged and should be addressed in future research. Firstly, the unbalanced gender distribution of the sample (71.7% mothers, 28.3% fathers) introduces potential bias. This distribution reflects the traditional gender division of labor in Chinese families. It is particularly true in the context of special education needs, where mothers bear primary respon-

sibility for caring for their children, managing household duties, and maintaining their jobs (Figueiredo and Pereira, 2025). However, this imbalance means the results of our study may overrepresent the experiences of mothers, who often face more direct parenting stress and burnout risks due to their primary caregiver role. In contrast, fathers may report stress related to parenting self-efficacy or financial pressure (AKTU, 2024), which were less likely to be captured in the present study. To address this, future studies should adopt stratified sampling to ensure a more balanced gender ratio, and also conduct multi-group analyses to compare gender differences.

Secondly, the exclusive use of self-report scales raises the risk of common method bias. Despite Harman's test, self-report data are still prone to social desirability bias. To mitigate this, future studies should integrate multi-source data by collecting spouse ratings of marital satisfaction, teacher observations of parenting behaviors, or qualitative data via semi-structured interviews to triangulate self-reported results. Observational methods such as recording parent-child interactions during caregiving tasks can also provide a more objective measure of parenting stress and burnout.

Thirdly, the cross-sectional study design limits causal inference and fails to capture dynamic relationships. While this study found that parenting stress negatively predicts life satisfaction (directly and via burnout), the relationship may be bidirectional. Parenting burnout may not only mediate the effect of stress on life satisfaction, but could also exacerbate stress over time. Future research should aim to track changes in variables and determine the causal relationship between variables through longitudinal and experimental studies.

Fourthly, restriction of the sample to Guangdong Province limits external validity and cultural applicability. Guangdong is an economically developed province in China with relatively abundant special education resources. This may reduce parents' stress compared to less developed regions and hence limit the generalizability of our results to other Chinese provinces. Cross-culturally, the pressures faced by parents in Guangdong differ from those in Turkey (AKTU, 2024) and Portugal (Figueiredo and Pereira, 2025). For instance, the cultural characteristics of maternal-dominated parenting in Chinese families may amplify the buffering effect of marital satisfaction, but fail to reflect the moderating effect of joint parenting by parents in other cultures. Future studies should include parents from diverse regions in China and conduct cross-cultural comparisons to clarify how cultural factors moderate the proposed model.

Finally, this study focused only on biological parents and overlooked other caregivers, while also ignoring differences in household structure. Not all children with special needs are raised by their biological parents. Some are cared for by grandparents or other relatives, who face unique challenges such as intergenerational conflicts, concerns about the biological parents, and physical limitations (Lee et al., 2016), none of which were explored here. Household structure may also influence parenting experiences, with previous research showing that the number of children in a household affects their sleep and development, and mediates the indirect relationship between parental stress and parental burnout (AKTU, 2024; Figueiredo, 2022). Whether the special child has other siblings, and whether these other siblings are also special needs children, may bring different parenting pressure to the parents. Future research should expand the sample to include non-parental caregivers and different household structures to examine how these factors moderate the model.

5. Conclusions

The parenting stress of parents of children with special needs negatively predicts their life satisfaction, with parenting burnout playing a partial mediating role, and marital satisfaction playing a moderating role. Therefore, future prevention or intervention efforts should focus on parenting stress, parenting burnout, and marital satisfaction to enhance the life satisfaction of parents of children with special needs.

Availability of Data and Materials

The research data can be found at: https://zenodo.org/records/17177392.

Author Contributions

WC designed the research study. WC and ZY performed the research. MX and ZY analyzed the data and wrote the original draft. WC and GL reviewed the original draft critically for the data analysis and interpretation of the results. WC, MX, and GL revised the manuscript. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript. All authors have participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of Guangxi Normal University (approval number: 2023-366).

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Conflicts of Interest

The authors declare no conflicts of interest.

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