



The Impact of Parental Solid Self, Treatment Involvement, Stress, and Parenting Styles on Children's Mental Health Symptom Severity

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Abstract

With the increasing rate of mental health disorders among youth in the United States (U.S.) and the essential role of parents in children's development, many studies have investigated the relationship between parental factors and children's mental health. The current study expanded on this research by exploring the impact of parent solid self (i.e., one subcategory of differentiation of self), parenting stress, parenting styles, and parent involvement in treatment on children's mental health symptom severity. The sample included 216 parents (U.S. residents; $M_{age} = 33.84$, $SD_{age} = 5.384$) with at least one youth aged 3–17 years actively or historically in mental health treatment. Participants completed an online survey that included a demographic questionnaire and measures of parenting styles, parental solid self, parental stress, and children's symptom severity. A simple linear regression found that parental solid self and stress levels were associated with the severity of children's symptoms. A two-way ANOVA revealed that parenting styles had a significant main effect on children's symptom severity. Results also showed that the level of authoritative parenting style mediated the relationship between parental solid self and children's symptom severity. This study further highlighted the importance of promoting individual therapy or psychoeducation for parents and how it might benefit children's treatment. Future research may consider children's perspectives, how parents engage with their child's treatment, incorporating more expansive assessment methods, and longitudinal designs to further explore the impact of parents' differentiation of self, parental stress, parenting styles, and parental involvement in treatment on children's symptom severity.

Keywords Parenting styles · Solid self · Parental stress · Child functioning · Mediation model

Highlights

- Parental level of solid self was negatively associated with children's symptom severity.
- Parenting styles played a dominant role in children's symptom severity.
- Authoritative parenting style mediated the relationship between parental solid self and children's symptom severity.
- Parental involvement in children's treatment may not play a dominant role in children's symptom severity.
- Promoting individual therapy or psychoeducation for parents might reduce children's symptom severity.

According to the World Health Organization (WHO, 2021), mental diseases affected an estimated one out of every seven (about 14%) adolescents (aged 10–19) in the world in 2019. However, in the United States (U.S.) these

rates are even higher, with about 18% of 10- to 14-year-olds and 21.5% of 15- to 19-year-olds experiencing mental health disorders, based on the 2019 data from the Global Burden of Disease Collaborative Network (2020). Thus, it is imperative for researchers and clinicians to pay attention to children's mental health, especially in the U.S. Because parents play an essential role in children's overall behavioral and emotional development and functioning (Parry et al., 2018; Schuengel et al., 2012), the present study aims to explore parental factors that influence children's overall mental health symptom severity.

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Previous studies investigated the relationship between different parental factors and specific children's mental health diagnoses or symptom clusters; however, few studies have considered children's overall mental health symptoms. In addition, this study's Bowen family systems theory framework and unique focus on parental solid self as a predictor of child mental health symptom severity, provided a significant new contribution to the literature. The current study addressed these gaps by exploring the impact of parental levels of solid self, parenting stress, parenting styles, and parental involvement in children's treatment on children's symptom severity.

Children Mental Health Conditions

Centers for Disease Control and Prevention's (CDC, 2023) data on children's mental health showed that depression, anxiety, attention deficit hyperactivity disorder (ADHD), and behavior problems have increased over time and are the leading diagnoses among children and adolescents in the U.S. ADHD among youth aged 4 to 17 has increased from 6.1% in 1997–1998 to 10.2% in 2015–2016 (Xu et al., 2018). Adolescent depression has also increased from 8.1% in 2009 to 15.8% in 2019 (Wilson & Dumornay, 2022). Additionally, the prevalence of youth who had been diagnosed with anxiety grew from 5.5% in 2007 to 9.4% in 2016–2019 (CDC, 2023). Given the COVID-19 pandemic that started in 2020, the WHO (2022) announced a 25% global increase in the prevalence of depression and anxiety and that there was a disproportional increased risk of suicidal and self-harming behaviors, especially for young people. Several studies reported that both internalizing and externalizing symptoms from childhood often persisted in adulthood and were related to negative outcomes, like a higher risk of comorbidities, criminal activities, lower income, and shorter life duration (Arslan et al., 2020; Eugene, 2021; Evans and Cassells, 2013; National Research Council, 2009). Therefore, the mental health crisis for youth in the U.S., and the role that parent characteristics and involvement may play in influencing child outcomes, is of paramount importance.

Parental Levels of Solid Self

Few studies have explored the solid flexible self (also known as solid self or I-position; Skowron and Friedlander, 1998) in the context of parent-child relationships. Solid flexible self has been defined as the ability to honor one's personal psychological values and goals, resist conforming to pressures from others, and accept objective advice to improve the self (Schnarch & Regas, 2012). The concept of

solid flexible self was based on differentiation from Bowen's theory and has been applied by systemic clinicians in practical settings.

While limited, there has been some empirical research suggesting a connection between parental solid self and child outcomes. For example, Peleg et al. (2015) investigated 88 Israeli adolescents and their biological parents, and found that parents' levels of I-position were negatively correlated to adolescents' separation anxiety. More specifically, maternal I-position negatively predicted adolescents' separation anxiety (Peleg et al., 2015). Another study of 55 urban families found that higher differentiation of self in mothers was related to higher academic achievement and lower aggression in children (Skowron, 2005). Additionally, Mozas-Alonso et al. (2022) researched a sample of 140 Spanish non-single parents and their child(ren) aged 12–19 years old, and showed that parents' I-position levels were correlated to their responsiveness, as demonstrated by a positive correlation with their warmth-communication style and negative correlation to their criticism-rejection style. Mozas-Alonso et al. (2022) also indicated that parents with higher levels of I-position displayed higher demandingness, such as being more likely to have an inductive form of rule setting (i.e., explain the rules but also consider children's needs), and less likely to have an indulgent form of rule setting (i.e., no rules or demands in limiting children's behaviors).

Parenting Styles

Studies have shown that parenting styles also have an impact on children's internalizing and externalizing symptoms (Lorence et al., 2019). Baumrind (1968) considered parenting styles as the manner in how parents rear their children based on prototypic patterns (e.g., parents' expectations, demands on performance, etc.) and identified three parenting styles: (1) authoritative, (2) authoritarian, and (3) permissive. Based on Baumrind's theories of parenting styles, Maccoby and Martin (1983) proposed a new two-dimensional model that informed parenting styles, which considered levels of demandingness and responsiveness. Because I-position or solid sense of self in Bowenian theory has been found to be correlated to parent levels of demandingness and responsiveness (Mozas-Alonso et al., 2022), it is important for the current study to explore the impact of both parental solid self and parenting styles on children's mental health symptom severity.

Based on Baumrind's description in 1968, authoritative parents provide guidance for their children to direct their behaviors but also leave space for children's autonomy at the same time. Therefore, authoritative parents are both demanding and responsive (Maccoby & Martin, 1983;

D'souza & Sudhamayi, 2016). Authoritarian parents were defined as restrictive and controlling of children's behaviors, and not allowing children to disobey their directions or set-up rules (Baumrind, 1968). They were highly demanding but not responsive, which means they would punish their children for not following the rules, leading to their children having less autonomy (Maccoby & Martin, 1983; D'souza & Sudhamayi, 2016). Permissive parents were described by Baumrind (1968) as nonpunitive and fully accepting parents who would not force or direct their children's behaviors to follow the rules, but preferred to affirm children's desires and impulses and allow them to do what they want. These parents are involved in children's growth and highly responsive, but rarely set up any demands or rules to control their children (Maccoby and Martin, 1983; D'souza and Sudhamayi, 2016).

Research has investigated the relationship between parenting styles and children's growth and mental health, especially related to anxiety and depression. Previous studies showed that harsh parenting, as a characteristic of authoritarian parenting (Smetana, 2017), was correlated to higher levels of internalizing symptoms in children (Scharf et al. 2016). Polcari et al. (2014) added that another typical behavior presented by authoritarian parents, physical yelling or verbal aggression, was associated with a greater level of internalizing symptoms in children (e.g., anxiety and depression). Sohrabzadeh Fard et al. (2017) recruited a sample of 200 adolescents in Iran and found that parenting styles based on parental acceptance could prevent severe levels of depressive symptoms in adolescents. Similarly in China, Cong et al. (2021) found that parental care could decrease the risk of adolescents' suicidal ideation and depressive symptoms. Alternatively, Cong et al. (2021) found that parental control might increase these risks. D'souza and Sudhamayi (2016) reviewed previous studies and found that authoritative parents in the U.S. tended to rear a high self-esteem child with less anxious symptoms. Some argue that cultural factors may impact the effectiveness of the authoritative parenting style; however, Romero-Acosta et al. (2021) compared the different parenting styles on Columbian youth and concluded that 8- to 13-year-olds were still at higher risk of developing possible anxiety symptoms under authoritative parenting styles.

As for literature on parenting styles and externalizing behavioral symptoms, Braza et al. (2013) reviewed previous articles and found that authoritative parents were more likely to have resilient children (Kritzas & Grobler, 2005), and children under authoritative parenting styles were less likely to have behavioral problems or externalizing symptoms (Steinberg et al., 2006). Braza et al. (2013) also explored the impact of gender on the relationship between parenting styles and children's internalizing and externalizing symptoms and found that authoritarian maternal style

was positively related to higher levels of children's internalizing and externalizing symptoms (Braza et al., 2013). In addition, the combination of authoritarian maternal style and permissive paternal style was positively associated with a higher level of children's aggression (Braza et al., 2013). Interestingly, the combination of both permissive maternal and paternal styles was only positively associated with girls' physical aggression (Braza et al., 2013). Based on a meta-analysis from Pinquart (2017), fewer child behavioral problems were longitudinally related to authoritative parenting style, but other parenting styles (i.e., authoritarian, permissive, and neglectful parenting styles) were associated with increased problematic externalizing behaviors in children (Vučković et al. 2020).

Parenting Stress

Research has shown that parenting stress is strongly associated with various child, parent, and family outcomes (Holly et al., 2019). Therefore, both researchers and clinicians should consider the bidirectional relationship between parenting stress and children's mental health issues. Parenting stress has been defined as an adverse psychological reaction towards being in the parental role, derived from the discrepancy between the demands of parenting obligations and the scarcity of available support resources (Deater-Deckard, 1998; Gordon & Hinshaw, 2015; Morgan et al., 2002). According to Bowenian theory, a strong sense of solid self may theoretically protect against anxiety and parenting stress, as it provides parents with acceptance in their role without fear of criticism or judgment from others (Bowen, 1978). According to Krycak et al. (2012), differentiation of self has been found to mediate the negative impact of stressful events on psychological stress in a general adult population. Therefore, the current study considered parenting stress along with parental solid self as influential factors on children's mental health symptom severity.

Research has suggested that parents with higher parenting stress may be less likely to ameliorate children's problems and may even exacerbate children's mental health conditions (Holly et al. 2019). For instance, Hattangadi et al. (2020) found that if parents reported higher parenting stress during their children's infancy, their children were twice as likely to have mental health conditions by age three. Lorenzo-Blanco et al. (2013) found that adolescents' mental health conditions were positively influenced by good parent-child interaction and less parenting stress. In addition, it has also been suggested that parenting stress may mediate the relationship between adversity and children's mental health outcomes, acting as a buffer to protect children's mental health and resilience (Uddin et al., 2020).

Parental Involvement in Children's Treatment

Parental involvement in children's mental health treatment has been identified as an important factor in the effectiveness of children's treatment (Gopalan et al., 2010; Haine-Schlagel et al., 2020; Haine-Schlagel & Walsh, 2015; Karver et al., 2006; Nock & Ferriter, 2005). Haine-Schlagel and Walsh (2015) and Staudt (2007) defined parent treatment engagement as consisting of two elements: (1) attitudinal engagement (i.e., treatment expectations, treatment benefits perceptions, and therapeutic relationships) and (2) behavioral involvement (i.e., attendance, treatment participation, and homework completion). Parental involvement in children's treatment can be viewed as an indicator of the style and quality of the parent-child relationship. For example, a highly permissive parent may not choose to be involved in children's treatment, or a highly stressed parent may not feel they have the capacity to be involved in children's treatment; thus, potentially influencing child mental health outcomes. Therefore, the current study included parental involvement in a variety of forms as a potential predictor variable of child mental health symptom severity.

Several studies have explored the relationship between parental involvement and children's treatment outcomes. A systemic review from van der Kolk et al. (2019) concluded that direct parental involvement in childcare-based interventions would have promising effects on children's behavior issues. Another systematic review of parental engagement in Cognitive Behavioral Therapy (CBT) for children's anxiety (Cardy et al., 2020) mentioned the typical aim of parental involvement was to help parents understand core CBT rationale by providing psychoeducation. This review pointed out that previous studies only showed CBT plus parent involvement was effective to treat children's anxiety and avoidance, but no conclusions could be drawn to illustrate that parental involvement alone would enhance the treatment outcomes (Cardy et al., 2020). Haine-Schlagel et al. (2020) investigated parents of toddlers at risk of autism and found that provider-perceived parent engagement positively influenced treatment implementation.

The Current Study

Data from the WHO (2022) and CDC (2023) showed that children and adolescents in the United States had a higher rate of mental health conditions, including internalizing and externalizing disorders. The exploration of parental solid self on child mental health outcomes is a unique contribution to the existing literature. While solid self has

mainly been used by clinicians to better understand the concept of differentiation of self in adults (Schnarch & Regas, 2012), there is limited research on this concept, especially in relation to parents and how it may influence children's symptom severity (Mozas-Alonso et al., 2022; Peleg et al., 2015; Skowron, 2005). Additionally, while previous studies have discussed the relationships between specific disorders or clusters of symptoms in children and parental stress or parenting styles (e.g., Holly et al., 2019; Lorence et al., 2019; Vučković et al., 2020); few studies have explored variations in children's overall mental health symptom severity based on parental stress and parenting styles. Similarly, previous investigations (e.g., Haine-Schlagel et al., 2020; van der Kolk et al., 2019) on the positive impact of parental involvement in mental health treatment on child outcomes only targeted one specific mental health condition rather than overall symptom severity.

Thus, we addressed the gaps in previous literature by exploring if parental levels of solid self, along with parenting stress, parenting styles, and parental involvement in children's treatment would impact children's overall mental health symptom severity. We hypothesized that:

H₁: Parental level of solid self would be a significant predictor of children's symptom severity. Higher levels of parental solid self would be related to lower children's symptom severity scores.

H₂: Parental stress level would be a significant predictor of children's symptom severity. Higher parental stress levels would be associated with higher children's symptom severity scores.

H₃: There would be statistically significant differences between authoritative, permissive, and authoritarian parenting styles with regard to their children's symptom severity. Parents with authoritative parenting styles were expected to have children with the lowest symptom severity scores.

H₄: There would be statistically significant differences among three different parental involvement styles in children's treatment (parent-only, child-only, both parent and child included in treatment) with regard to their children's symptom severity. Children's symptoms severity was expected to be the lowest when both parent and child were engaged in treatment.

H₅: There would be a statistically significant interaction effect between parenting styles and parental involvement in children's treatment on children's symptom severity.

H₆: Authoritative parenting would mediate the relationship between parental level of solid self and children's symptom severity, where the relationship between levels of parental solid self and children's symptom severity would be explained by the level of authoritative parenting style.

Methods

Procedures

This was a quantitative study that employed a pre-experimental cross-sectional survey research design.

Recruitment Method

Participants were recruited during November 2022 to January 2023 from different parent groups from social media (e.g., Facebook) and professional association listservs (e.g., APA divisions). The purpose of the study, a time estimation, raffle information, and inclusion criteria was provided in the virtual recruitment flier. Participants were informed that the survey was estimated to take approximately 20 min and that individuals who completed this survey could elect to be entered into a raffle for one of five \$50 Amazon gift cards. This study was approved by the Institutional Review Board (IRB) at the Alliant International University (Protocol number: IRB-AY2022-2023-88). Inclusion criteria for participants were: (1) a current U.S. resident and parent of a youth (3–17 years old); (2) parents, child(ren), or both currently in, or with a history of, participating in mental health treatment. The age range of children was selected based on the age ranges of the measures used, and the desire to generalize the results to families of children who have experienced or are currently experiencing mental health issues. Any past or current form of mental health treatment was used as inclusion criteria because this study aimed to be applicable to families who have experienced or are currently experiencing mental health issues. Varied forms of mental health treatment for children were included, such as: if parents participated in mental health treatment focused on parenting, if children participated in therapy, or if both parents and children participated in therapy. According to family systems theory, when any family member struggles with mental health issues, all family members in the system are impacted (Gehart & Tuttle, 2003). Past mental health treatment has also been shown to have a lasting impact on children's current symptoms severity (Bachler et al., 2020); thus, suggesting that participants who engaged in past and/or current mental health treatment would be eligible for inclusion, as lasting effects of mental health treatment for children's outcomes may be assumed.

Data Collection

Participants voluntarily chose to be in the study by clicking on an online, anonymous Qualtrics survey link. Participants then read the informed consent and made their selection for consenting to participate. If they agreed to participate, they

would be directed to complete the measures. All participant data was retrieved via Qualtrics.

Ethical Considerations

To avoid any ethical culpability, a list of free national mental health hotlines, and listservs of therapists for reference were provided in the informed consent and at the end of the survey.

Participants

According to power calculations estimated for mediation analyses using Hayes' PROCESS model with bootstrapping by Fritz and MacKinnon (2007), 162 participants were needed to meet a power of 0.80, with a small to moderate effect size, and an alpha of 0.05. There were 216 parents (ages 22–51 years old; $M_{age} = 33.84$, $SD = 5.384$) with at least one youth aged 3 to 17 years old who were actively or historically in mental health treatment. There were slightly more male (55.1%) than female participants, which is notable, as most studies about parents have predominantly been about mothers or have a majority female sample. Participants included a diverse range of ethnicities, including predominantly White participants (60.2%), with 17.6% Black/African American, 12.5% Native American/Indigenous, 5.6% Asian/Pacific Islander, 3.2% Latino/Hispanic, and 0.9% Middle Eastern. Most participants reported having an undergraduate degree or above (79.6%). Almost half of the participants' annual family income was below \$75,000 per year (46.7%). Most parents who participated in this study were married (74.5%) with one child at home (62%). There was about an even distribution of those who were involved in parent-only treatment (38.9%), child-only treatment (26.9%), and both parent and child treatment interventions (34.3%) (Table 1).

Measures

Demographic Questionnaire

Demographic Questionnaire collected demographic information about the participants. The measure included 9 items regarding age, gender, ethnicity, marital status, level of education, income level, the number of child(ren) at home, and the age of child(ren), plus the one-item treatment involvement question.

The one-item treatment involvement question was created to measure how parents were involved in their children's treatment. This question consisted of three choices, including (1) parent-only interventions, which meant only parents were involved in mental health treatment for their children; (2) child-only interventions, which meant only

Table 1 Participant Demographics

Characteristic	<i>n</i>	%
Age (years)		
22–29	47	21.8
30–39	130	60.2
40–51	39	18.0
Gender		
Male	119	55.1
Female	97	44.9
Race/Ethnicity		
Latinx/Hispanic	7	3.2
African American/Black	38	17.6
Asian/Pacific Islander	12	5.6
Middle Eastern	2	0.9
White	130	60.2
Native American/Indigenous	27	12.5
Education		
Pre-High School	5	2.3
High School	39	18.1
College or Undergraduate	131	60.6
Graduate (MA or Doctorate)	41	19.0
Annual Family Income		
less than \$25,000/year	7	3.2
\$25,000–49,999/year	56	25.9
\$50,000–74,999/year	38	17.6
\$75,000–99,999/year	32	14.8
\$100,000–124,999/year	36	16.7
\$125,000–149,999/year	13	6.0
\$150,000–174,999/year	18	8.3
\$175,000–199,999/year	13	6.0
more than \$200,000/year	3	1.4
Relationship Status		
Single	8	3.7
Married	161	74.5
In a committed partnership	12	5.6
Separated/divorced	21	9.7
Widowed	14	6.5
Number of child(ren) at home		
1	134	62.0
2	76	35.2
3	4	1.9
4	2	0.9
Parental involvement to children's treatment		
Parent-only interventions	84	38.9
Child-only interventions	58	26.8
Both-included in treatment interventions	74	34.3

children participated in mental health treatment; and (3) both-included in treatment interventions, which meant both children and parents were involved in mental health

treatment for children. Mental health treatment included individual or family outpatient therapy, inpatient psychiatric hospitalization, and parent-only workshops/psychoeducational lessons/sessions/consultations.

Parental Stress Scale (PSS)

Parental Stress Scale (PSS; Berry & Jones, 1995) assessed parental stress. The PSS was an 18-item self-report scale, measuring both positive (8 items) and negative (10 items) themes of parenthood. Based on a sample of 358 parents, Berry and Jones (1995) found that the 18-item version of PSS showed good internal consistency (Cronbach's alpha = 0.83) and good test-retest reliability ($r = 0.81$) over a period of six weeks. The PSS also demonstrated a strong convergent validity with the Parenting Stress Index ($r_{Total} = 0.75$, $p < 0.01$). Berry and Jones (1995) also found a significant stress difference between mothers of children with clinical behavior problems ($N = 51$, $M = 43.2$, $SD = 9.1$) and non-clinical sample ($N = 116$, $M = 37.1$, $SD = 8.1$). All 18 items were 5-point Likert Scales from strongly disagree (1) to strongly agree (5). After reversing the scores of necessary items, the sum of all items was calculated. A higher score meant a higher parental stress level (Berry & Jones, 1995). In the current study, the Cronbach's alpha of the PSS was 0.69, approaching acceptable internal consistency.

Parenting Styles and Dimensions Questionnaire-Short Version (PSDQ-Short Version)

Parenting Styles and Dimensions Questionnaire-Short Version (PSDQ-Short Version; Robinson et al. 2001) was a 32-item, self-report instrument aimed at measuring parenting behavior patterns based on Baumrind's theory of three parenting styles: authoritative, authoritarian, and permissive. Three subfactor dimensions were included in the authoritative parenting style subscale: (a) connection, (b) regulation, and (c) autonomy granting. There were also three subfactor dimensions for the authoritarian parenting style subscale, including (a) physical coercion, (b) verbal hostility, and (c) non-reasoning/punitive. The Permissive parenting style subscale only contained one subfactor—the indulgent dimension. Robinson et al. (2001) examined a sample of 1377 parents and found that both the authoritative and authoritarian parenting style subscales showed good internal consistency (Cronbach's alpha of authoritative = 0.86; Cronbach's alpha of authoritarian = 0.82), but the permissive parenting style subscale's internal consistency was slightly lower than the other two (Cronbach's alpha = 0.64). Concurrent validity for the PSDQ-Short Version was investigated by Topham et al. (2011), and the authoritative subscale was significantly correlated with family affective

responsiveness ($r = 0.31$) and involvement ($r = 0.31$) subscales of the McMasters Family Assessment Device (FAD; Epstein et al., 1983). Authoritarian and permissive subscales were significantly related to the Minimizing response ($r_{aut} = 0.44$; $r_{per} = 0.23$) and Punitive response ($r_{aut} = 0.47$; $r_{per} = 0.20$) subscales of the Coping with Children's Negative Emotions Scale (CCNES; Fabes et al., 2002). Based on a sample of 239 parents (Hubbs-Tait et al. 2008), the mean of authoritarian, authoritative, and permissive subscales were 1.8 ($SD = 0.41$), 4.13 ($SD = 0.42$), and 2.20 ($SD = 0.65$) respectively. Each item was rated on a 5-point Likert scale (1 = Never, 2 = Once in a while, 3 = About half of the time, 4 = Very often, 5 = Always), indicating parents' behavior frequency. The mean of each subscale was calculated. A higher score meant more frequent parenting practices used under a particular parenting style. In the current study, the Cronbach's alpha was 0.90 for the authoritative subscale, and 0.93 for the authoritarian subscale, indicating excellent internal consistency reliability. Similar to Robinson et al. (2001), the Cronbach's alpha of the permissive parenting style in this study was slightly lower than the other two (Cronbach's alpha = 0.66), thus approaching acceptable internal consistency reliability.

Crucible Differentiation Scale-Solid Self (CDS-Solid Self)

Crucible Differentiation Scale-Solid Self (CDS-Solid Self) measured one dimension of differentiation (CDS; Schnarch & Regas, 2012). Based on the sample of 1,037 general adult participants from the research conducted by Schnarch and Regas (2012), as one of the six components of CDS, the Solid Self factor contained 14 items ($M = 4.63$, $SD = 0.70$) and showed excellent internal consistency reliability (Cronbach alpha = 0.91). The Solid Self subscale showed significant although weak positive correlations with the Professional Quality of Life scale ($r = 0.37$), Kansas Marital Satisfaction scale ($r = 0.16$), and the Social Desirable Response Set ($r = 0.28$), illustrating good construct validity (Flanagan, 1978; Hays et al., 1989; Schumm et al., 1986). The level of the truthfulness of each item based on participants' subjective perception of their relationships was rated on a 6-point Likert scale (1 = Not at all True, 6 = Very True). After reversing necessary item scores, the mean of all subscale items was calculated. A higher score indicated a higher level of parental solid self. In this study, the Cronbach alpha of CDS-Solid Self was 0.76, indicating acceptable internal consistency reliability.

Symptoms and Functioning Severity Scale-Full (SFSS-Full)

Symptoms and Functioning Severity Scale-Full (SFSS-Full; Bickman et al. 2010) was used to measure children's symptom severity and functioning from a systemic

perspective as reported by the parents. The adult caregiver version of the SFSS-Full consisted of 26 items and contained two subscales, including both internalizing behaviors and externalizing behaviors. Based on a sample of 686 adult caregivers, SFSS-Full ($M = 50.17$, $SD = 10.00$) showed excellent internal consistency reliability (Cronbach's alpha = 0.94). The SFSS-Full was a revised version of SFSS-33, which showed convergent validity with other established scales, including the Child Behavior Checklist (CBCL; Achenbach, 1991), the Youth Outcomes Questionnaire (Y-OQ; Wells et al. 1999), and the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1999). The results showed that the SFSS-33 had significant positive relationships with CBCL ($r = 0.86$), Y-OQ ($r = 0.89$), and SDQ ($r = 0.79$), indicating strong convergent validity. The frequency of each item (i.e., certain behaviors or symptoms) in the past two weeks was rated on a 5-point Likert Scale from never (1) to very often (5). Higher scores indicated overall more severe symptoms and lower functioning, and lower scores represented less severe symptoms and higher functioning. The sum of all items was divided by the number of items to calculate the average score and a linear transformation was done by multiplying this average by the factor U for the Adult Caregiver version (12.594) and then adding the factor V (17.636). In the current study, the SFSS-Full showed a good internal consistency reliability (Cronbach's alpha = 0.85).

Data Analysis

Data from 395 participants was collected on Qualtrics. However, 97 participants were removed based on incomplete surveys or not meeting inclusion criteria (e.g. parent age younger than 18, did not have any treatment experience, did not mention children's age, or did not live in the U.S.). Of the 298 participants left, 54 participants were removed who finished in less than 5 min, 22 participants were removed for answering inconsistently about their children's ages or experiences with therapy, and 6 participants were removed that were extreme outliers. This left the final sample size of 216 participants, which was used for the data analyses. There were no significant differences in the data removed from the data in the final sample.

Descriptive statistics were calculated for the demographic variables. Internal consistency reliability was checked for all measures. The main analyses included simple linear regression, two-way ANOVA, and mediation using Hayes' PROCESS model with bootstrapping. For one of the simple linear regression analyses, the predictor was parental solid self, and the outcome variable was children's symptom severity. For the other simple linear regression analysis, the predictor was parental stress, and the outcome variable was children's symptom severity. In using the two-

way ANOVA, the study aimed to explore the group differences in children's symptom severity based on parenting styles, and type of parental involvement in children's treatment. The dependent variable (DV) was children's symptom severity, and the independent variables (IVs) were parenting styles (authoritative, authoritarian, and permissive), and parental involvement in children's treatment (parent-only, child-only, and both parent and child included in treatment). For the mediation model, the predictor was parental solid self, the outcome variable was children's symptom severity, and the mediator was parenting style.

Results

Simple Linear Regression

A simple linear regression analysis was conducted to estimate a linear equation that predicted levels of children's symptom severity based on parental level of solid self. Prior to analysis, several descriptive statistics and graphs were generated to examine and test assumptions. The results of the Pearson's r correlation showed a significant negative relationship ($r = -0.34$, $p < 0.001$) between parental levels of solid self and children's symptom severity, which met the assumptions for further regression analysis. Inspections of both the histogram and the normal probability plots of the residuals indicated that the errors were normally distributed. Inspection of the scatterplot of predicted and residual standardized scores revealed that children's symptom severity scores were distributed equally on each level of parental solid self, thus satisfying the assumption of homoscedasticity. The results of the linear regression analysis (see Table 2) revealed a significant correlation between parental solid self and children's symptom severity scores, $F_{(1, 214)} = 27.46$, $p < 0.001$. With a beta of -0.34 ($t = -5.24$, $p < 0.001$), parental levels of solid self accounted for 11.4% of variance in children's symptom severity, indicating that it was a significant predictor of children's symptom severity. In other words, parents with greater levels of solid self were likely to report lower symptom severity in their children.

A second simple linear regression analysis was conducted to estimate a linear equation that predicted levels of

children's symptom severity based on their parental stress level. Assumptions were checked prior to analysis. Pearson's correlation coefficient and a scatterplot showed a significant positive linear relationship ($r = 0.32$, $p < 0.001$) between parental stress and children's symptom severity. Inspection of both the histogram and the normal probability plots of the residuals indicated that the errors were normally distributed. Inspection of the scatterplot of standardized predicted and residual scores revealed that children's symptom severity scores were distributed equally on each level of parental stress, thus satisfying the assumption of homoscedasticity. The results of the linear regression analysis (see Table 2) revealed a significant correlation between children's symptom severity scores and parental stress level, $F_{(1, 214)} = 25.00$, $p < 0.001$. With a beta of 0.32 ($t = 5.00$, $p < 0.001$), parental stress levels accounted for 10.5% of the variance in children's symptom severity, indicating that it was a significant predictor of children's symptom severity. In other words, parents having greater stress levels were likely to report more severe symptoms in their children.

Two-way ANOVA

Two-way ANOVA assumptions were checked before the data analysis. Evaluation of measures of skewness, histogram, and normal Q-Q plots for the distribution of levels of children's symptom severity indicated only a slight negative skew. Based on the large sample size (216 valid data items) and an approximate approach to normality, no data transformation was conducted. Moreover, the results of Levene's test of homogeneity of variances showed no significant difference in variance between the groups on the levels of children's symptom severity ($F = 2.17$, $p = 0.058$, $p > 0.001$). The results of the two-way ANOVA (see Table 3) showed an overall significant difference in levels of children's symptom severity among parents based on their parenting styles ($F_{(df = 2, 215)} = 11.68$, $p < 0.001$, $\eta^2 = 0.101$).

Table 3 Two-Way ANOVA Summary Table—Children's symptom severity by Parenting styles and Parental involvement in children's treatment

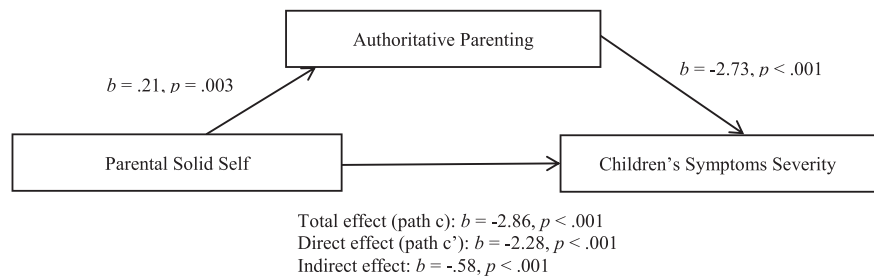
Source	SS	df	MS	F ^a	p
Parenting styles	603.02	2	301.51	11.68	< 0.001
Parental treatment involvement	6.18	2	3.09	0.12	0.887
Parenting styles*Parental treatment involvement	44.74	4	11.18	0.43	0.785
Error	5345.11	207	25.82		
Total	6022.12	215			

^a $R^2 = 0.112$

Table 2 Simple Linear Regression Summary Table—Predictors of Children's symptom severity

Factor	R	R ²	β	t	p	F	p
Parental solid self	0.34	0.11	-0.34	-5.24	<0.001	27.46	<0.001
Parenting stress	0.32	0.11	0.32	5.00	<0.001	25.00	<0.001

Fig. 1 Mediation model of associations between parental solid self, authoritative parenting, and children's overall symptoms



The results of the post hoc Bonferroni test showed that parents with authoritative parenting styles ($M = 51.38$) reported significantly lower children's symptom severity than those with authoritarian ($M = 55.42$) or permissive ($M = 54.50$) styles ($p < 0.001$). No significant difference was found between authoritarian and permissive parenting styles ($p > 0.05$). Overall, parenting styles accounted for 10.1% of the variance in children's symptom severity.

The results of the two-way ANOVA did not show a significant difference in levels of children's symptom severity among parents based on their involvement in children's treatment ($F_{(df = 2, 215)} = 0.12, p = 0.887, \eta^2 = 0.001$). The results of the two-way ANOVA did not show a significant parenting styles by parental treatment involvement interaction effect on levels of children's symptom severity ($F_{(df = 4, 215)} = 0.43, p = 0.785, \eta^2 = 0.008$).

Mediation Analysis

Parental levels of solid self significantly predicted levels of authoritative parenting ($b = 0.21, 95\% \text{ CI } [0.08, 0.35], t = 3.06, p = 0.003, R^2 = 0.042$). Parental levels of authoritative parenting significantly predicted the severity of children's symptom severity ($b = -2.73, 95\% \text{ CI } [-3.72, -1.74], t = -5.43, p = 0.000 < 0.001$). Parental solid self and parental levels of authoritative parenting were both statistically significant predictors of children's symptom severity. The total effect was significant, in that parental solid self was a statistically significant predictor of the severity of children's symptoms ($b = -2.86, 95\% \text{ CI } [-3.94, -1.79], t = -5.24, p = 0.000, p < 0.001, R^2 = 0.114$). Parental solid self also had a direct effect on children's symptom severity ($b = -2.28, 95\% \text{ CI } [-3.31, -1.24], t = -4.35, p = 0.000 < 0.001, R^2 = 0.222$), meaning the effect of parent solid self on children's symptom severity while controlling for level of authoritative parenting. This direct effect accounted for 22.2% of the variance in children's symptom severity.

The indirect effect of parental solid self on children's symptoms was also statistically significant ($b = -0.58$), CI 95% $[-1.01, -0.20]$, as the confidence interval did not include 0. The indirect effect of the mediating variable

(-0.58) was less than the direct effect (-2.28), and the direct effect (-2.28) was less than the total effect (-2.86). Therefore, the parental level of authoritative parenting acted as a mediating variable, explaining the relationship between parental solid self and children's symptom severity (see Fig. 1).

Discussion

In the present study, we explored how parental solid self, parental stress, parenting styles, and parental involvement in children's treatment would impact children's symptom severity. Four primary outcomes emerged. First, the findings showed that parental solid self was negatively associated with children's symptom severity, finding support for H_1 . Additionally, higher parenting stress was positively associated with greater severity of children's overall symptoms, which supported H_2 . The two-way ANOVA results suggested that parenting style made a significant difference in children's symptom severity, therefore offering support for H_3 . However, parent involvement in children's mental health treatment did not make a significant difference, thus H_4 was not supported. No significant interaction effect of parenting styles by parental involvement was found, therefore H_5 was also not supported. Lastly, and most interestingly, the level of authoritative parenting mediated the relationship between parental solid self and children's symptom severity, thus supporting H_6 .

The first primary outcome supported the first hypothesis. The solid flexible self or I-position was used to operationally understand the differentiation of self (Schnarch, 2009). According to Bowenian theory, parents with lower levels of differentiation of self tend to project their undifferentiated relationship issues (e.g., marital discord) and anxiety onto their children, consequently limiting children's process of differentiation of self and further development (Bowen, 1978; Papero, 2014). In the present study, the parental solid self was shown as a negative predictor of children's symptom severity. This finding expands upon the support found in previous studies, such as higher levels of differentiation of self in mothers predicting lower levels of aggressive behaviors in children (Skowron, 2005), and

higher maternal I-position (a similar concept to solid self) predicting lower separation anxiety symptoms in adolescents (Peleg et al., 2015).

The second main outcome supported the second hypothesis, showing that parenting stress was positively associated with the severity of children's symptoms. These results provided further evidence for the negative relationship between parenting stress and children's mental health outcomes (Stracke et al., 2023), including both internalizing (Rodriguez, 2010) and externalizing symptoms (Neece et al., 2012). This study is unique in that it focuses on both internalizing and externalizing symptoms, rather than on one specific disorder or one cluster of symptoms (Uddin et al., 2020).

The third main outcome supported the third hypothesis. Previous studies found that parents with authoritative parenting styles reportedly had children with higher levels of confidence and academic achievements (Hayek et al. 2022), as well as positive psychological behavior (Masud et al., 2019) and emotion regulation (Morris et al., 2007). The current study provided further evidence that parents with authoritative parenting styles reported having children with lower mental health symptom severity.

The fourth and fifth hypotheses were not supported by the current results. A review of parent engagement in child and family mental health treatment from Haine-Schlagel and Walsh (2015) found no consistent association pattern between parent participation in treatment and child outcomes. More specifically, three articles found significant positive associations between parent participation behaviors and improved functioning (Clarke et al., 2015; Noser & Bickman, 2000; Richards et al., 2008), while four articles did not find significant relationships between parent engagement and improved symptoms (Clarke et al., 2015; Kendall et al., 1997; Noser & Bickman, 2000; Stoolmiller et al., 1993). The current study supported that the type of parental involvement in children's treatment does not have a significant effect on children's symptom severity. Possible reasons might include that there are other factors, like parenting styles, that change the relationship between parental engagement and the levels of children's symptom severity, resulting in no significant differences in the ways that parents engaged in treatment among children's symptom severity. Exploring who was involved in children's mental health treatment and how parents were involved in treatment may help further the understanding of the relationship between parent engagement in children's treatment and children's symptom severity. In addition, the literature review of parental participation and engagement from Haine-Schlagel and Walsh (2015) pointed out that few studies examined structured treatment protocols for parental participation in children's mental health treatment, and that more studies were needed.

The fourth main outcome supported the sixth hypothesis. The mediation model in the current study further supported Bowen's theory and expanded upon previous studies to show that the level of authoritative parenting style mediated the relationship between parental solid self and children's symptom severity. Previous studies found that parenting styles were impacted by parental differentiation of self (Kriščiūnaitė & Pakrošnis, 2013; Mozas-Alonso et al. 2022; Ragelienė & Justickis, 2016). More specifically, an authoritarian parenting style was associated with characteristics of a low differentiation of self (Mozas-Alonso et al. 2022; Ragelienė & Justickis, 2016), and an authoritative parenting style was positively correlated with a high degree of differentiation of self (Kriščiūnaitė & Pakrošnis, 2013; Mozas-Alonso et al., 2022). Furthermore, Bowen's theory argued that parents with a higher level of differentiation of self tend to have more authoritative parenting styles and can provide support and care to their children in a way that allows them to have appropriate autonomy in both emotional and behavioral development (Bowen, 1978), and thus, lower symptom severity. This study's mediation results offer empirical support for this idea, as greater levels of parental solid self were associated with higher levels of authoritative parenting, which seemed to explain the negative relationship between higher levels of parental solid self, and lower levels of children's symptom severity.

Limitations and Future Research

The present study had several limitations. First, this study utilized a measure that only considered three parenting styles (i.e., authoritarian, authoritative, and permissive parenting styles) but did not include the uninvolved/neglectful parenting style, which was defined as showing both low responsiveness and low demandingness toward child-rearing (Maccoby & Martin, 1983). It was estimated that parents with a neglectful parenting style would be less likely to participate in children's treatment, and therefore would not have elected to participate in this study. However, in future research, it may be helpful to utilize a measurement that assesses the four parenting styles (e.g., the Scale of Parenting Style; Gafoor & Kurukkan, 2014) and their impact on children's symptom severity.

Second, we only used one subscale of the measurement of differentiation of self to assess how parental flexible solid self would impact children's symptom severity. Future researchers may consider applying the whole Crucible Differentiation Scale to measure the differentiation of self and to explore how other points of the Crucible Four Points of Balance would impact parenting styles and children's symptom severity (Schnarch & Regas, 2012).

Third, this study used parent-reported information only. For example, children's symptom severity in this study was

parent-reported and did not consider teacher-reported or self-reported information. In the future, researchers may consider utilizing teacher-report and self-report scales to enrich the details of the picture of children's symptom severity and reduce response bias. In addition, the solid self in this study was the parents' self-report. Therefore, future research may consider children's perspectives to explore parents' solid self and parenting styles, to further investigate how parenting stress, styles, solid self, and treatment involvement would impact children's symptom severity.

Fourth, we used one question asking how parents got involved in children's treatment rather than utilizing a standardized measure with good validity and reliability. Future studies may assess parental treatment engagement by using a standardized structured scale with good validity and reliability, or observational information, to gather more detailed information about parental involvement in children's treatment.

Lastly, the current study employed a cross-sectional research design which limited the exploration of causal relationships among variables. A longitudinal study may be considered in the future to explore the causal relationship between parent factors and children's symptom severity.

Clinical Implications

It is common in clinical settings for parents to view children as the identified patient with behavioral problems (e.g., acting out) or emotional concerns (e.g., depression and anxiety) as the primary presenting problem. Many systemic theories like Bowenian family therapy, encourage family sessions or parent modules in children's treatment (Gehart & Tuttle, 2003). A review from Haine-Schlagel and Walsh (2015) concluded that parent-focused intervention strategies had been shown to be an essential part of children's evidence-based treatments across many types of child mental health disorders. The findings in this study suggested that it may be more important for clinicians to understand and encourage the development and strengthening of parents' solid self, as well as decreasing parents' stress in order to be more effective in reducing children's mental health symptom severity, rather than simply understanding parents' perspectives of children's behavioral or emotional progress. It is also important to highlight that this study included many fathers, which is generally considered rare in parenting research and in participation in therapy, despite father involvement being noted as crucially important to child outcomes (von Klitzing & White, 2020). This study offers a specific contribution to the literature, suggesting that research on and mental health treatment for children should make greater efforts to include mothers and fathers, as likely parents of any gender may have an impact on child outcomes. In order to reduce children's overall

mental health symptom severity, systemic clinicians are encouraged to consider intervention strategies that aim to improve parental levels of solid flexible self, as another path to supplement children's treatment. The influence of parental solid flexible self on child outcomes is a unique finding of this research that suggests empirical support for aspects of Bowen family systems theory.

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Compliance with ethical standards

Conflict of interest The authors declare no competing interests.

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