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The Causal Relationships among Family Functioning, Parental Support, and Children's Behavioral Disorders: The Mediating Role of Maternal Mental Health in Ahvaz, Iran

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Abstract

Background and Objective: : This study investigates the mediating role of mothers' mental health in the relationships among family functioning, parental social support, and children's behavioral disorders in Ahvaz, Iran. Understanding how family and social dynamics interact with maternal psychological well-being is essential to improve child mental-health outcomes and guide family-centered interventions within the Iranian sociocultural context .

Methods: This quantitative, cross-sectional correlational study recruited 216 mothers of fourth-to-sixth-grade elementary students in Ahvaz during the 2018–2019 academic year. Data were collected using validated instruments: the Rutter Children's Behavior Questionnaire, the Family Assessment Device (FAD), the MOS Social Support Scale, and the SCL-25 to measure maternal mental health. Structural Equation Modeling (SEM) with AMOS-23 was performed to test direct and indirect effects, and mediation was assessed using Hayes' bootstrap method (5,000 resamples) .

Findings: : Family functioning significantly predicted both maternal mental health ($\beta = 0.306, p < 0.01$) and children's behavioral disorders ($\beta = 0.232, p < 0.01$). Parental social support was directly related to maternal mental health ($\beta = 0.230, p < 0.01$) but not to children's behavioral disorders ($\beta = 0.063, p > 0.05$). Maternal mental health directly affected children's behavioral disorders ($\beta = 0.239, p < 0.01$) and mediated the effects of both family functioning ($\beta = 0.018, p < 0.01$) and parental social support ($\beta = -0.040, p < 0.01$) on behavioral outcomes. The final structural model showed good fit ($\chi^2/df = 2.97, RMSEA = 0.061, CFI = 0.913$) .

Conclusion: Maternal mental health serves as a vital pathway linking family interactions and social support to children's behavioral health. Improving family functioning and strengthening parental social networks can enhance mothers' psychological resilience and reduce behavioral problems in children. These findings support culturally tailored family-centered mental health strategies and preventive policies in educational and public health settings across Iran .

Keywords: Mental health, Children behavior, Social support, Family function.

Introduction

Behavioral disorders in childhood represent one of the most serious psychological and societal challenges due to their enduring influence on cognitive, emotional, and social development. Early behavioral difficulties during preschool and elementary school years—such as aggression, disobedience, and lack of impulse control—often serve as precursors to more severe outcomes in adolescence, including school dropout, deviant behavior, and criminal activity (1). These difficulties impose significant costs on individuals, families, and entire communities, making early identification and intervention essential for promoting social adaptation and mental health (2, 3). Globally, research indicates that the prevalence of behavioral disorders among children ranges between 2% and 16%, with a notably higher incidence among boys and those in lower socioeconomic settings (4, 5). In Iran, similar patterns have been observed, where cultural, familial, and educational stressors intensify behavioral difficulties (6). Theoretically, family functioning is regarded as one of the most influential determinants of children's behavioral outcomes. Families with healthy communication, emotional cohesion, and problem-solving skills provide a psychological buffer that mitigates behavioral and emotional disturbances (7, 8). Conversely, dysfunctional families often experience fragmented interactions and ineffective conflict resolution, which negatively affect parenting and the child's emotional stability (9, 10). According to the McMaster Model of Family Functioning, family dynamics encompass roles, affective involvement, behavioral control, and communication—all of which directly influence children's psychological adjustment (11). Parallel to family functioning, parental social support—defined as tangible, emotional, and informational resources obtained from one's social network—is a crucial environmental factor contributing to mental well-being and adaptive parental behavior (12,13). Strong social networks enhance resilience, reduce stress, and improve the capacity of parents to manage their children's behavioral challenges. Previous studies have linked inadequate social support with anxiety, depression, and maladaptive parenting, while high social support has been shown to moderate the effects of parental stress and improve family harmony (14–16). Maternal mental health, as a mediator, plays a vital role in explaining how family functioning and social support translate into child behavioral outcomes. According to the World Health Organization, mental health encompasses a state of well-being that enables individuals to cope with life's stressors and contribute productively to society (17). Empirical studies have shown that mothers struggling with mental health issues such as depression and anxiety are more likely to have children exhibiting emotional and behavioral problems (18–21). Psychological distress disrupts parenting mechanisms, decreases emotional availability, and impairs the regulation of discipline and

affection, leading to maladaptive patterns in children's development (22, 23). Despite ample evidence underscoring family and social dynamics in shaping child behavior, few studies have comprehensively examined these variables within integrated causal frameworks—particularly in Middle Eastern contexts where socio-cultural norms uniquely influence family roles and social networks(24-29). Creating a healthy family environment is essential for nurturing children and reducing the prevalence of behavioral problems, which consequently supports the overall health and stability of communities (30). Research has demonstrated that social responsibility and parenting support enhance the mental health of children and adolescents by addressing behavioral problems (19). These findings indicate that robust social support for parents significantly mitigates the prevalence of behavioral, emotional, and social issues among children (20). According to the World Health Organization, mental health is defined as a state of well-being in which individuals recognize their abilities, manage the normal stresses of life, work productively, and contribute positively to their communities. In this context, mental health serves as a foundational element for both personal well-being and effective community functioning (31). Moreover, mental health encompasses the capacity for coherent, enjoyable, and effective work, as well as the flexibility to navigate challenging situations and the ability to self-assess one's self-esteem (32). The concept extends to an inner sense of well-being, ensuring efficiency, and fostering self-reliance, promoting competitive capability, encouraging intergenerational connections, and facilitating the self-actualization of intellectual and emotional potentials (33-34). In Iran, especially in Ahvaz—a diverse and socioeconomically polarized city—the interplay between maternal mental health, family structure, and social support remains underexplored.

Aim and Hypotheses:

The present study aims to evaluate the causal relationships among family functioning and parental social support with children's behavioral disorders, emphasizing the mediating role of maternal mental health as a central psychological mechanism. Specifically, the investigation is grounded in the following structured hypotheses: 1. Family functioning directly predicts the occurrence and severity of children's behavioral disorders; 2. Parental social support exerts a direct predictive effect on these behavioral outcomes; and 3. Maternal mental health functions as an intermediary variable that transmits and moderates the influences of family functioning and parental social support on children's behavioral disorders. By integrating these paths within a structural model, the study seeks to clarify how family and social dynamics interact with maternal psychological well-being to shape behavioral health trajectories in children, providing empirical evidence to inform both family-centered interventions and mental health support strategies.

Methods

Study Design and Setting

This quantitative, cross-sectional correlational study was conducted in Ahvaz City, Khuzestan Province, Iran, during the 2018–2019 academic year. The cross-sectional design allowed for the simultaneous assessment of the relationships between variables at a single point in time.

Participants and Sampling

Population and Sample Size: The target population comprised mothers of elementary school students (grades 4, 5, and 6) attending public schools in Ahvaz. Based on a power analysis conducted prior to data collection (not detailed here), and aiming for robust SEM estimation, a target sample size of approximately 250 was sought. Convenience sampling was used, based on school accessibility and administrative approval from the relevant educational authorities in Ahvaz. The final analyzed sample included 216 mothers who provided complete and usable data.

Inclusion Criteria: Mothers of schoolchildren currently enrolled in grades 4–6; literacy sufficient for accurate questionnaire completion (self-report); voluntary participation; and provision of written informed consent.

Exclusion Criteria: Incomplete questionnaires (defined as missing data on more than 10% of items across all instruments); mothers who self-reported a known, severe, ongoing psychiatric disorder requiring immediate hospitalization (to avoid confounding the measurement of sub-clinical mental health symptoms assessed by the SCL-25).

Measures/Instruments

Data were collected using four primary scales:

1. **Child Behavioral Disorders Questionnaire (Dependent Variable):** Adapted from the Rutter Children's Behavior Questionnaire (7), this parent-report instrument assesses various observable behavioral problems. Higher scores indicate a greater severity of behavioral disorder. The instrument demonstrated strong reliability in the current sample (Cronbach's $\alpha=0.87$).

2. **Family Assessment Device (FAD) (Independent Variable):** It was used to assess the quality of family functioning across several dimensions, including cohesion, expressiveness, and problem-solving (8). Lower composite scores indicate poorer (more dysfunctional) functioning. The reliability for the total score in this sample was high ($\alpha=0.87$).

3. **MOS Social Support Scale (Independent Variable):** This was a 12-item measure assessing perceived availability of different types of support (emotional, tangible aid, informational) from family, friends, and neighbors (9). Higher scores indicate greater perceived support. Reliability in this sample was good ($\alpha=0.83$).

4. **SCL-25 (Mediating Variable):** This was a short-form version of the Symptom Checklist-90 (SCL-90) measuring current levels of psychological distress across various symptom dimensions (e.g., anxiety, depression) (10). It served as the measure for Maternal Mental Health status. Higher scores indicate poorer mental health. Reliability in this sample was adequate ($\alpha=0.84$).

Ethical Considerations

The study protocol adhered strictly to ethical guidelines established for human subject's research in Iran, approval was granted by the Research Ethics Committee of Azad University, Ahvaz Branch (Ref. ID: IR-AUAH-10620706972013). Participants received detailed information regarding the study's purpose, procedures, anonymity assurances, and the voluntary nature of their participation. Written informed consent was obtained from every participating mother, emphasizing their right to withdraw at any point without penalty. Confidentiality was maintained by de-identifying all data prior to analysis.

Statistical Analysis

Data preparation and preliminary analyses were performed using SPSS version 26 (IBM Corp., Armonk, NY). Structural Equation Modeling (SEM) and associated path analysis were conducted using AMOS version 23 (IBM Corp.).

1. **Preliminary Analysis:** Descriptive statistics (means, standard deviations), reliability testing (Cronbach's α), and checks for univariate normality were performed. Normality was assessed by ensuring that skewness and kurtosis values fell within the acceptable range of ± 3 .

2. **Correlational Analysis:** Pearson product-moment correlations were calculated to examine initial linear associations between all four core constructs.

3. **Structural Equation Modeling (SEM):** A latent variable model was constructed based on the hypotheses. Maximum Likelihood (ML) estimation was utilized. Model fit was assessed using multiple indicators:

- Chi-square to degrees of freedom ratio (χ^2/df): Preferred value ≤ 3 .
- Comparative Fit Index (CFI): Preferred value ≥ 0.90
- Root Mean Square Error of Approximation (RMSEA): Preferred value ≤ 0.08 (ideally ≤ 0.06).

4. **Mediation Testing:** Indirect effects were tested using bootstrapping procedures with 5,000 resamples. Significance was established if the 95% bias-corrected confidence interval (CI) did not contain zero

Results

The statistical population of this study comprised 216 mothers of 4th to 6th grade elementary school students in Ahvaz during the academic year of 2018-2019.

The largest age group among the subjects was between 40 and 44 years, with a frequency of 82 participants, while the smallest group was aged 25 to 29, comprising only 3 participants (see Table 1).

Table 1: Distribution of subjects by age

Age	No.
25-29	3
30-34	16
35-39	74
40-44	82
45-49	41
Total	216

Table 2: Distribution of subjects by educational attainment

Education	No.
Under Diploma	76
Diploma	79
Bachelor's degree	57
Master's degree	4
Total	216

The analysis revealed that the mean scores for the variables studied were as follows: child behavioral disorders (28.44), family function (149.00), parental social support (42.49), and maternal mental health (73.00). The minimum and maximum scores, along with the standard deviations for each variable, are detailed in Table 3.

Table 3: Descriptive findings for research variables for all subjects

Statistical indexes Variables	Mean	Standard Deviation	Minimum	Maximum	No.
Child behavioral disorders	28.44	14.17	12	45	216
Family function	149	58.39	71	211	

Parental social support	42.49	19.60	24	71
Maternal mental health	73	30.76	34	109

Significance testing showed that correlation coefficients between all variables were statistically significant at the $p \leq 0.01$ level (see Table 4). To evaluate the proposed model, path analysis was conducted using AMOS software with the maximum likelihood estimation method. The model included four variables: child behavioral disorders as the dependent variable,

family functioning and parental social support as independent variables, and maternal mental health as a mediating variable. An initial pathway model illustrating children's behavioral disorders based on family functioning, parental social support, and maternal mental health is depicted in Figure 1

Table 4: Simple correlation coefficients between research variables in all subjects

Statistical indexes	1	2	3	4
Variables				
1- Child behavioral disorders	1			
2- Family function	r= - 0.313	1		
3- Parental social support	r= - 0.157	r= 0,145	1	
4- Maternal mental health	r= -0.317	r= 0.340	r= 0.274	1

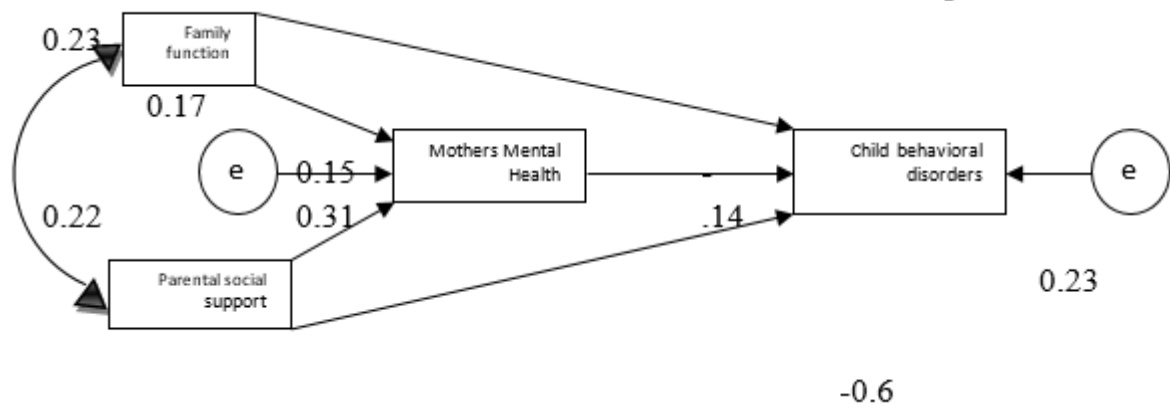


Fig 1: Standard model in standard mode

To assess the model's fit to the observed data, fit indices such as chi-square (χ^2), standardized chi-square index (χ^2 / df), comparative fit index (CFI), and root

mean square error of approximation (RMSEA) were analyzed (see Table 5). The RMSEA value of 0.238 indicates that the initial model did not fit the data well

and required modification. Following adjustments, the relationship between parental social support and children's behavioral disorders was eliminated. The final model is presented in Figure 2

Table 5: Path coefficients of direct effects between research variables in the primary and final standard model

Path	Primary standard model			Final standard model		
	Path type	Standard path coefficients (β)	p	Path type	Standard path coefficients (β)	P
Family function - Child behavioral disorders	Direct	0.228-	0.001	Direct	0.232-	0.001
Family function - Mental health	Direct	0.306	0.001	Direct	0.306	0.001
Parental social support - Child behavioral disorders	Direct	0.063-	0.334	Direct	-	-
Parental social support - Child behavioral disorders	Direct	0.230	0.001	Direct	0.230	0.001
Maternal mental health - Child behavioral disorders	Direct	0.222-	0.001	Direct	0.239-	0.001

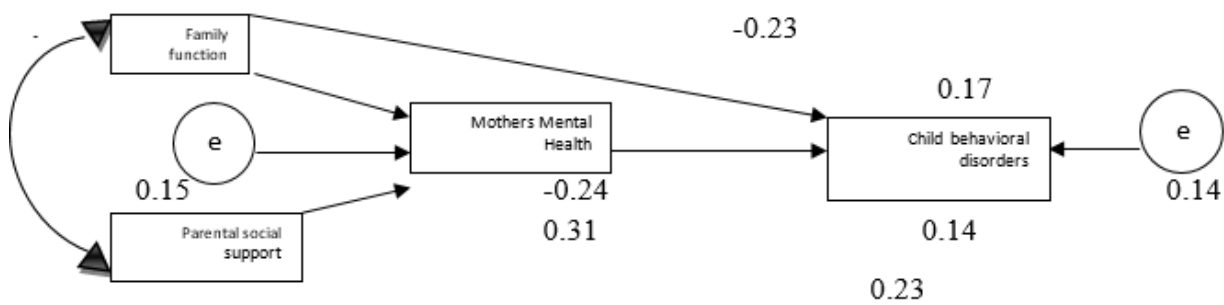


Fig.2: Final model

The results revealed that the path coefficient between family function and child behavioral disorders was $\beta = 0.232$, which was statistically significant at p

< 0.01 . This finding indicates a direct relationship between family function and children's behavioral disorders (see Table 5). Additionally, the path coefficient

between family function and maternal mental health was $\beta = 0.306$, also significant at $p < 0.01$, confirming a direct relationship between family performance and maternal mental health (see Table 5). In contrast, the path coefficient relating parental social support to children's behavioral disorders was $\beta = 0.063$, which did not achieve statistical significance at $p > 0.05$. Hence, there was no direct relationship found between parental social support and children's behavioral disorders (see Table 5). However, the path coefficient between parental social support and maternal mental health was $\beta = 0.230$, which was significant at $p < 0.01$, indicating a direct relationship between maternal mental health and parental social support. Furthermore, the pathway coefficient for maternal mental health with respect to children's behavioral disorders was $\beta = 0.239$, also significant at $p < 0.01$, suggesting a direct correlation between maternal mental health and children's behavioral issues.

To assess the mediation effects, the multiple mediation model proposed by Hayes was employed using bootstrap tests. The results indicated that all tested mediation paths were significant at $p < 0.05$, based on a 95% confidence interval with 5,000 bootstrap resamples. Notably, since all computed paths were outside the confidence interval, every intercept relation was deemed significant (see Table 6). Specifically, the path coefficient from family function to children's behavioral disorders through maternal mental health was $\beta = 0.018$, which was statistically significant at $p < 0.01$, indicating an indirect relationship. Likewise, the path coefficient between parental social support and children's behavioral disorders through maternal mental health was $\beta = 0.040$, which was also statistically significant at $p < 0.01$, evidencing an indirect relationship involving maternal mental health.

Table 6: Multiple mediation model of Hayes (bootstraps) test results for all interface paths

Indirect relations						
Independent variable	Intermediate variable	Dependent variable	Bootstrap		P	
			Bootstrap	P	Bootstrap	P
Family function	Maternal mental health	Child Behavioral disorders	0.017-	0.003	0.018-	0.003
Parental social support	Maternal mental health	Child Behavioral disorders	0.037-	0.006	-0.040	0.006

Discussion

The present study highlights the predictive and mediating effects of family functioning and parental social support on children's behavioral disorders through maternal mental health, producing a structural model aligned with the McMaster conceptual framework and WHO's mental health definition. These findings reinforce the hypothesis that the social ecology of the family—defined by communication, cohesion, and role clarity—constitutes a primary domain within which behavioral health develops (11,35). Empirical validation from diverse cultural contexts supports these results. Studies among Western and Asian samples (7, 14, 20,24- 27) indicate that cohesive and affectively responsive families tend to produce children with better self-regulation and

fewer externalizing behaviors. Our model adds to this evidence by showing that in an Iranian setting (Ahvaz), maternal mental health functions as a significant mediator, capturing the psychological bridge between systemic family dynamics and child emotional outcomes. Strong family adaptability and social support create protective effects against maternal emotional dysregulation, in line with global reports of resilience in mothers of children with developmental disorders(47,48). The pattern of mediation found here accords with previous research emphasizing maternal well-being as a cornerstone for effective parenting. Chronic maternal stress and psychological distress distort the consistency of discipline and warmth necessary for behavioral regulation (19, 21).

The findings of studies in Tehran and Guilan (41, 45) similarly note that weak perceived social support amplifies anxiety and depression in mothers, translating into inconsistent parenting styles. Our data extend those observations by confirming that support systems—both emotional and instrumental—act jointly with family communication to mitigate behavioral risk factors (13,42).

Model fit indices ($\chi^2/df = 2.97$, RMSEA = 0.061, CFI = 0.913) attest to structural adequacy, and the indirect paths observed further align with contemporary multilevel interventions recommended by international frameworks (50, 55). The WHO-Europe 2024 report emphasizes family support and parental mental health promotion as key levers for children's psychological development, endorsing precisely the cascading relationships demonstrated here. Our findings support those policy directions and contextualize them within the socio-economic reality of Ahvaz, where urban crowding and economic instability intensify familial strain. Comparisons to recent Iranian evidence (52–53) suggest rising attention to family-based prevention programs and mindfulness-oriented maternal counseling. Social support emerges as a robust determinant of maternal coping, resonating with studies of parental networks under economic adversity (15, 20, 54). In the Iranian milieu, where extended family and community ties retain cultural significance, harnessing social capital through mothers' groups, peer counseling, and inclusive educational workshops can sustain positive cycles of wellbeing.

From a policy perspective, the findings underscore the necessity of integrated family-health frameworks. The WHO 2025 Framework (55) advocates universal promotion of mental health across life stages, especially through early childhood family interventions. Implementation of this model at national and provincial levels—such as Ahvaz's Education Office—can enable early screening of behavioral problems (via Rutter scale (34) coupled with targeted family counseling using McMaster's dimensions. In synthesis, this demonstrates that improving family functioning and reinforcing social support structures effectively operate through enhancing maternal mental health, thus reducing behavioral disorders among children. Preventive frameworks that combine community-based parenting education, school health collaboration, and maternal psychological support represent cost-effective and evidence-driven pathways to achieving sustainable child mental health outcomes in Iran and comparable socio-cultural environments .

Limitations: The cross-sectional design constrains the ability to establish definitive causation, even with the use of path modeling. Furthermore, relying solely on maternal report for family functioning, support,

and mental health introduces common method variance. The sample, drawn from specific primary schools in Ahvaz, limits generalizability across the broader Iranian populace or different developmental stages. Future longitudinal work should include paternal perspectives on family functioning and social support, and cross-regional comparisons are warranted to assess contextual variability. Additional moderators—such as economic stress, specific parenting styles (e.g., authoritarianism vs. authoritative), and maternal perfectionism—merit inquiry as they may strengthen or weaken the identified mediation paths.

Conclusion

Family functioning and parental social support indirectly reduce childhood behavioral disorders through maternal mental health improvement. Preventive and therapeutic efforts focusing on family communication skills and maternal psychological resilience are recommended for mental health promotion among Iranian elementary school children. Strengthening family interaction quality and mothers' psychological resilience effectively reduces childhood behavioral disorders. Mental-health policies should prioritize family-centered preventive initiatives with particular investment in maternal support systems. This culturally grounded evidence reaffirms that child welfare stems first from the emotional health of parents and the structural integrity of the family unit. The pathways identified—Family Functioning → Maternal Mental Health → Child Disorders, and Social Support → Maternal Mental Health → Child Disorders—provide clear targets for intervention programs applicable to educational and public health contexts of Ahvaz.

Footnotes

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Authors' Contribution: All authors contributed substantially to the conception, design, and execution of the study. Maryam Gilasi conducted data collection, statistical analysis, and initial drafting. Dr. Saeed Bakhtiari supervised the conceptual development, provided critical revisions, and ensured methodological rigor. Karami assisted in data interpretation and the refinement of analytical procedures. All authors reviewed and approved

the final version of the manuscript and collectively take responsibility for the integrity and accuracy of the reported research.

Conflict of Interests Statement: The authors declare that there are no conflicts of interest—financial, institutional, or personal—associated with the publication of this study. The authors maintained complete scientific independence throughout the research design, data analysis, and interpretation processes, and no external party influenced the outcomes presented herein.

Ethical Approval: The research was conducted in accordance with the ethical principles of the Declaration of Helsinki. Prior approval was obtained from the Research Ethics Committee of Azad University of Ahvaz (Approval Code: 10620706972013). Participants were informed of the study objectives and procedures before data collection, and written consent was obtained from all mothers included in the research.

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