

Research Paper



Relationship of Behavioral Disorders in Girls With Learning Disabilities With Parental Stress and Spiritual Well-being in Mothers in Shiraz City, Iran Mediated by Mother-child Interaction

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ABSTRACT

Background and Objectives: Raising children with behavioral disorders is a stressful experience and many mothers experience parental stress. The present study aims to investigate the relationship of behavioral disorders in girls with learning disabilities (LDs) with parental stress and spiritual well-being in mothers in Shiraz City, Iran through the mediating role of mother-child interaction.

Methods: The statistical population of this descriptive-correlational study included mothers of girls with learning disabilities in Shiraz, Iran in 2022. A total of 227 mothers of girls with learning disabilities were selected through random sampling. To collect data, the child behavior checklist, the parenting stress index (PSI), the child-parent relationship scale (CPRS), and the spiritual well-being scale (SWBS) were used. The proposed model was assessed using path analysis in SPSS, version 27 and AMOS.

Results: The results showed that all direct paths except parenting stress to behavioral disorders in children were significant ($P < 0.01$). In addition, indirect paths of parental stress and spiritual well-being to behavioral disorders in children mediated by mother-child interaction were significant ($P < 0.01$).

Conclusion: The results suggested that the corrected and final model had a good fit to the data and can be considered a helpful step towards understanding factors contributing to behavioral disorders in children with learning disabilities.

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Introduction

Learning Disability (LD) is a term used for recognizing and helping students who experience persistent academic failure and are not in the age groups of exceptional children [1, 2]. About 5% to 15% of learners are affected by LDs, which is more common among boys [3]. In Iran, its prevalence among students is 3% to 12% [4]. LDs are divided into three main categories, dyslexia, dysgraphia, and dyscalculia [5]. Based on the learner's age, intelligence quotient, type of education, or reading, writing, and calculation tests, students with LDs achieve less academically than expected. They often show major problems in learning and using listening, speaking, reading, writing, and math skills [6].

LDs are recognized as a crucial factor in poor academic performance and every year, many students have difficulties acquiring the content of their lessons at school. These students usually have average to above-average intelligence, but in similar educational conditions, they experience behavioral disorders compared to other students [7]. Lack of self-control and control over the environment causes symptoms of behavioral disorders in children with LDs [8]. Overall, between 14% and 24% of children and adolescents struggle with behavioral and emotional problems and disorders [9]. Behavioral problems that lead to many personal and social complications often antedate antisocial behaviors in these children [10].

The relationship of children with their caretakers has been noted by many among the factors contributing to behavioral problems in children with LDs. The reason is that mothers' reciprocal reactions form the basis of children's cognitive-emotional development and reduce the risk of being affected by psychological disorders [11]. Raising children with behavioral disorders is a stressful experience and many mothers experience parental stress [12]. The presence of a child with LD can cause parental stress in mothers. Raising a child with a disability is a serious task because it poses particular challenges for parenting. It is also correlated with diminished mental health and emotional disorders in mothers [13]. Different studies have demonstrated the relationship between parental stress and children's behavioral problems [14, 15].

Spiritual well-being can ameliorate many problems experienced by mothers of children with LDs, helping them to have a dynamic family and improving the behavioral problems of children. Evidence has suggested that mothers' religious beliefs are influential in improving

their children's behavioral problems [16]. Accordingly, religious beliefs can meet many human basic needs and fill in the ethical, emotional, and spiritual gaps that individuals may feel [17]. Spirituality is a human dimension that includes awareness, self-knowledge, and the need to transcend the self in everyday life to be united with a higher being. It is a collective affair with different levels and manifestations, such as conscious or unconscious, simple or complex, and developed or undeveloped [18]. Spirituality is defined as a set of adaptive skills based on the higher aspects of reality. When adopted, these abilities can facilitate unique skills of problem-solving, abstract thinking, and coping [19].

Moreover, both parental stress and spiritual well-being can affect children's behavioral disorders by influencing mother-child interaction. The presence of a child with disabilities immensely impacts all dimensions of family life, including the emotional, social, and economic aspects. In such situations, parents may react by denying the reality, not accepting their child's problem, showing anger and aggressiveness, and feeling depressed and guilty [20]. Therefore, with a disturbance in their internal adjustment, they feel they are responsible for their child, and at the same time, they may not be fully aware of their responsibility, the causes of the child's disability, the way of mother-child interact, and the characteristics of their child. Thus, they face additional roles that the birth of a child with disabilities brings [21]. The parent-child relationship has been considered in pathological studies as incorrect interactions can cause emotional and behavioral disorders in children [22]. Different studies have demonstrated the relationship between parental stress and children's behavioral problems [23-25].

Children with LDs can negatively affect mothers' social relations and even change the daily affairs of the family members, often resulting in irrecoverable harm to mothers' personal and social relations. The importance of the problems these children face and the effects on their interaction with their mothers require further research. Therefore, based on the issues outlined above, the present study was conducted to investigate the relationship of behavioral disorders in girls with LDs with parental stress and spiritual well-being in mothers in Shiraz City through the mediating role of mother-child interaction.

Methods

Path analysis was used in this correlational study. The statistical population included mothers of female students with LDs visiting centers for LDs in Shiraz city, Iran, in 2022. The required permissions were obtained

from the officials of centers for LDs. Based on Kline's [26] suggestion, researchers should enroll at least 10 to 15 participants per estimated parameter. In the present study, 9 variables exist, taking into account the possibility of dropping out of participants, 25 samples were considered for each variable. It should be noted that the enrollment of about 25 participants in each parameter increases the adequacy of the data for testing the model. The research instruments were given to 241 mothers of children with LDs who were willing and consented to participate in the study. Finally, after removing incomplete questionnaires, the data of 227 mothers were analyzed. The inclusion criteria for the mothers included being willing to participate in the study, having a child diagnosed with LD, being in the 28–50 age group, having a minimum education to understand the questionnaire items, living with a spouse, and answering all of the items. The exclusion criteria included unwillingness to continue the study and failure to complete the questionnaires. The cooperation of participants and officials of the centers was appreciated. The instruments were collected and the data were analyzed.

Research tools

The child behavior scale: The child behavior scale-designed by Michael Rutter in 1967, has 30 items that are scored based on a three-point Likert scale. The total score of the questionnaire ranges from 0 to 60. The scale has acceptable credibility [27]. The Persian version of this scale was first standardized in Iran by Yazdkhasti and Oreyzi [28] and its reliability was reported 0.93 using Cronbach's alpha. In the present study, Cronbach's alpha of the scale was 0.89.

The parenting stress index (PSI): The PSI was developed by Abidin [29]. It has 36 items to assess the importance of stress in the parent-child relationship. The PSI has three subscales, parental distress (PD), Parent-Child Dysfunctional Interaction (P-CDI), and Difficult Child (DC). It is scored based on a Likert scale from 1 to 5 (strongly agree to strongly disagree). The total stress score was used in this study. The higher the score, the more parenting stress [29]. The Persian version of this scale was first standardized in Iran by Babakri et al. [30] and its reliability was reported 0.89 using Cronbach's alpha. In the present study, Cronbach's alpha of the scale was 0.84.

Spiritual well-being scale (SWBS): The SWBS is a 20-item scale designed by Paloutzian et al. [31]. It has two subscales, religious well-being, which is well-being from the connection with a higher power, and existen-

tial well-being, which is a mental-social element. It is scored based on a six-point Likert scale from strongly agree to strongly disagree. The total score is calculated by the sum of the scores of all items [32]. Biglari et al. standardized the Persian version of this scale for the first time in Iran [32] and its reliability was reported 0.85 using Cronbach's alpha. In the present study, Cronbach's alpha of the scale was 0.81.

Child-parent relationship scale (CPRS): The CPRS is a 33-item scale developed by Pianta [33]. It assesses parents' perception of their relationship with their children. It consists of three dimensions, closeness (9 items), attachment (6 items), and conflict (18 items). This scale is scored based on a five-point Likert scale from 1: Strongly disagree to 5: Strongly agree. The total score is calculated by the sum of the closeness score and the inverse of conflict and attachment scores. The total score was used in this study. The higher the score, the higher the mother-child interaction [34]. Ashori al. standardized the Persian version of this scale for the first time in Iran [34] and its reliability was reported 0.87 using Cronbach's alpha. In the present study, Cronbach's alpha of the scale was 0.85.

Statistical analyses

Descriptive statistics (i.e. Mean \pm SD, and Pearson correlation coefficient) were employed to analyze the data. The skewness and kurtosis were employed to specify the data normality. To evaluate the fitness of the model, the indices, including mean square error of approximation (RMSEA), Tucker–Lewis index (TLI), comparative fit index (CFI), relative fit index (RFI), and normed fit index (NFI) were used. The proposed model in this study was assessed using path analysis in SPSS, version 27 and AMOS. The significance level of the research was considered to be $\alpha=0.05$.

Results

The participants in the present study were 227 mothers of girls with LDs with an age range of 38.45 years. One hundred and forty-five (63.88%) were housewives and 82 (36.12%) were employed. Table 1 presents the descriptive statistics including Mean \pm SD, correlation matrix, and normality through measures of skewness and kurtosis in the variables. The normality of the data was confirmed according to Table 1. As shown in Figure 1, an early version of the model was obtained to explain behavioral disorders in children based on parental stress, spiritual well-being, and mother-child interaction.

Table 1. Mean±SD, and Pearson correlation coefficient between the variables

Variables	Mean±SD	1	2	3	4	Skewness	Kurtosis
Children's behavioral disorders	37.04±3.98	1				-0.24	0.06
Parenting stress	118.31±11.01	0.29**	1			0.20	-0.73
Spiritual well-being	90.95±8.46	-0.36**	-0.23**	1		0.03	-0.67
Mother-child interaction	94.54±10.66	-0.39**	-0.31**	0.30**	1	-0.02	-0.60

**P<0.01



According to the results, the root mean square error of approximation (RMSEA) was 0.276 and the early model needed modification. When parental stress to behavioral disorders in children's path was removed, the RMSEA of the final model was 0.075, indicating its good fit (Tucker–Lewis index (TLI)=0.92, comparative fit index (CFI)=0.98, relative fit index (RFI)=0.92, normed fit index (NFI)=0.97) (Figure 2).

Table 2 presents the findings of the path coefficient estimations to examine direct assumptions. The results showed a negative relationship between parenting stress and mother-child interaction ($B=-0.41$, $\beta=-0.29$, $P=0.001$), and between spiritual well-being and behavioral disorders in children ($B=-0.36$, $\beta=-0.27$, $P=0.002$). Moreover, the relationship between mother-child inter-

action and behavioral disorders in children was negative ($B=-0.40$, $\beta=-0.31$, $P=0.001$). A positive relationship was observed between spiritual well-being and mother-child interaction ($B=0.34$, $\beta=0.22$, $P=0.014$). The direct paths from parenting stress to behavioral disorders in children were not significant ($B=0.21$, $\beta=0.12$, $P=0.200$).

Table 3 presents the significance of the indirect path from parental stress to behavioral disorders in children mediated by mother-child interaction ($\beta=0.03$, $P=0.001$). Moreover, the indirect path from spiritual well-being to behavioral disorders in children mediated by mother-child interaction was significant ($\beta=-0.03$, $P=0.008$).

Table 2. Path coefficients of direct relationship between the research variables in the final model

Path	B	β	P
Parenting stress → Behavioral disorders in children	0.21	0.12	0.200
Parenting stress → Mother-child interaction	-0.41	-0.29	0.001
Spiritual well-being → Behavioral disorders in children	-0.36	-0.27	0.002
Spiritual well-being → Mother-child interaction	0.34	0.22	0.014
Mother-child interaction → Behavioral disorders in children	-0.40	-0.31	0.001

**Table 3.** Path coefficients of indirect relationship between the research variables in the final model

Paths	β	P
Parenting stress to behavioral disorders in children through the mediating role of mother-child interaction	0.03	0.001
Spiritual well-being to behavioral disorders in children through the mediating role of mother-child interaction	-0.03	0.008



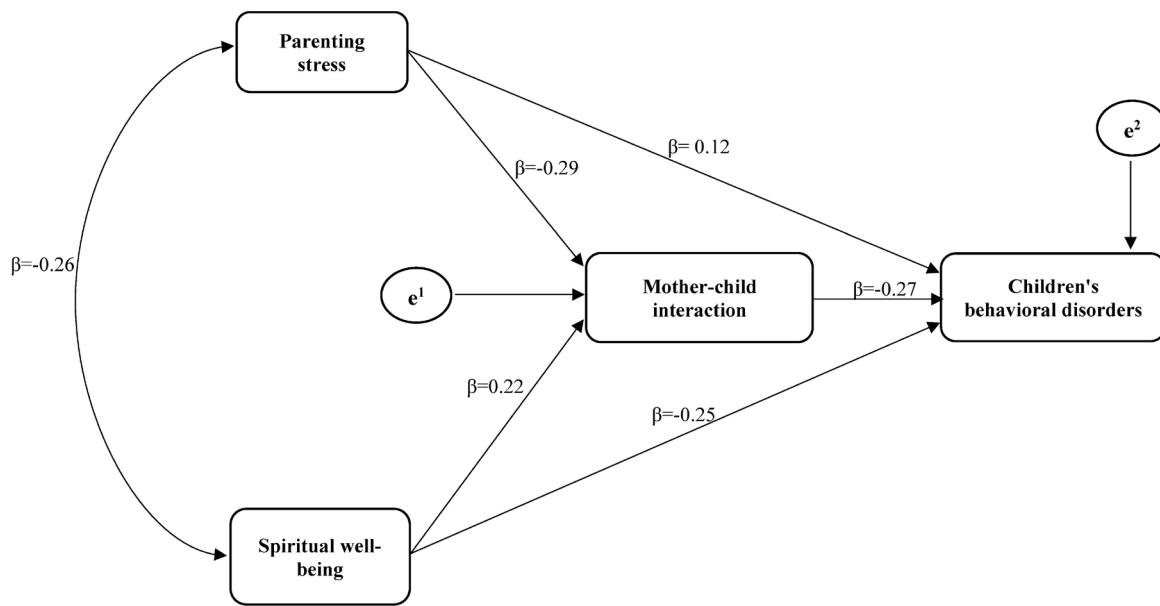


Figure 1. The initial model of the research

Discussion

The present study was conducted to investigate the relationship of behavioral disorders in girls with LDs with parental stress and spiritual well-being in mothers in Shiraz city through the mediating role of mother-child interaction. The results showed that the only non-significant path was parenting stress to behavioral disorders in children. The indirect paths to behavioral disorders in children were significantly mediated by mother-child interaction. The first finding was that no significant re-

lationship was observed between parental stress and behavioral disorders in children. This finding is inconsistent with the results reported by Van Loon et al. [15]. The relationship between parental stress of mothers and behavioral disorders in children was significant in Pearson's test. However, given the presence of mediating variable, the effect of parental stress on behavioral disorders in children was explained through the mediating variables (indirect paths). In other words, mothers' parental stress indirectly affected children's behavioral disorders in this model. Jiang et al. [35] reported a general recip-

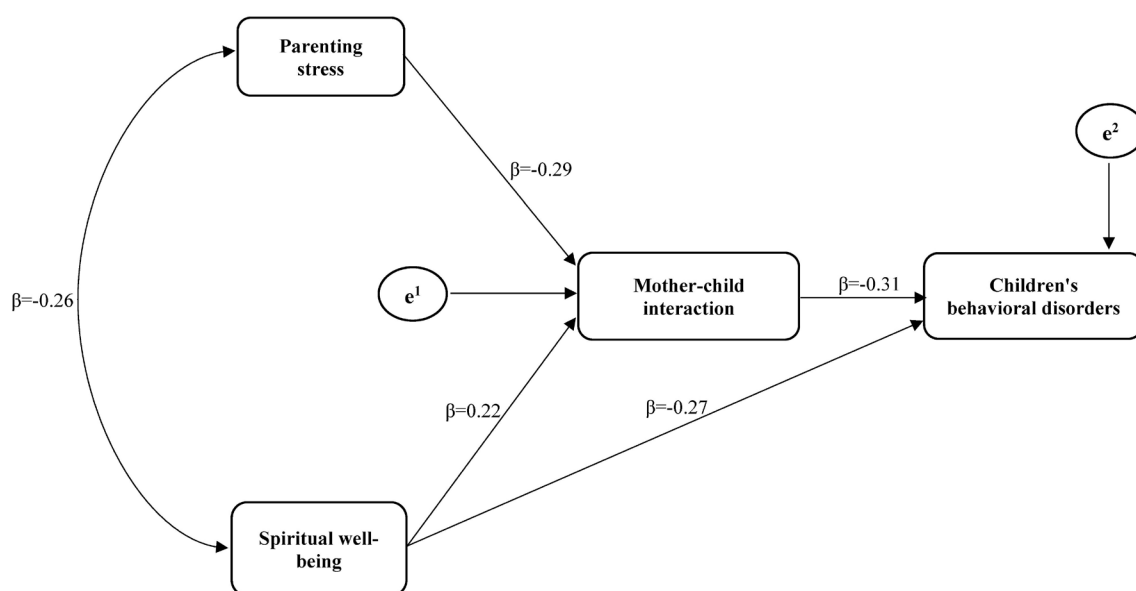


Figure 2. The modified final model of the research

cal relationship between parental stress and behavioral problems in children. According to Ward and Lee [36], high levels of parental stress, particularly in mothers, can increase their tendency to use flexible, threatening, and aggressive methods of parenting. This negatively impacts children's development, leading to more destructive behaviors. Family is the main institution in keeping the health of individuals and societies. One of the crucial factors influencing psychological and social growth is the mother-child relationship, which plays a major role in the life of a developing child. Dysfunctional parenting styles and incorrect parent-child interaction during a child's development can lead to communication problems and consequently, vulnerability to disorders, such as anxiety, behavioral problems, and psychological harm [22]. The parent-child relationship is a combination of unique behaviors, feelings, and expectations existing between parents and children and includes quality time, physical affection, and verbal communication.

Another finding was a significant positive relationship between spiritual well-being and behavioral disorders in children. To explain this, it can be argued that spiritual well-being has a crucial role in improving behavioral disorders in children. Accordingly, religious beliefs and actions help individuals to control problems and stress cognitively, emotionally, and physiologically at the intrapersonal level. They can also help them to accept responsibility for their thoughts and behaviors in conflicts and tensions, encouraging them to try to change [18]. At the interpersonal level, mother-child interaction allows individuals to direct their attention to God when they face conflicts and difficulties. By resorting to God, they can cope with their problems in a more relaxed way and try to resolve them. Since spiritual well-being increases the ability to connect with God, it helps mothers control the environment and their effective relationships with others.

In this study, a direct negative relationship was observed between mother-child interaction of mothers with behavioral disorders in children. It can be explained that mother-child interaction is vital in behavioral disorders in children. Based on the mother-child interaction model, higher emotional awareness and self-regulation capacity can help mothers experience less stress and interact better with their children, resulting in a more adjusted parenting style. The mother-child model adds listening to full attention as by directing their attention to their children fully, mothers make them understand that they listen to them [37]. When parents and children interact directly, full attention creates an internal representation of parents and their supportive performance in the child, leading to the creation of the image of a responsive

and available figure to keep them safe from danger. This helps to form a safe attachment and improves the quality of parent-child interactions. Studies have shown that behavioral problems in children are rooted in negative mother-child interactions [22]. The quality of mother-child interaction and mothers' warm affection is a factor that can predict anxiety and mood disorders in children. Improving the quality of parent-child interaction can reduce internalized problems, such as anxiety in children [24]. It seems that positive and warm relations include understanding basic factors in children's behaviors and effective responses to them. Therefore, as a supporter, it can prevent anxiety and mood disorders.

The results of indirect paths indicated that mother-child interaction mediated the relation of parental stress and spiritual well-being with behavioral disorders in children, which are mostly affected by mother-child interaction. It can be concluded that mother-child interaction is a complete mediator in this relationship. If parental stress is reduced and spiritual well-being is increased, mother-child interaction is also affected and improved. Mother-child interaction can lead to incorrect behavior in children and intensify behavioral disorders in children with LDs. A major factor contributing to psychological and social growth is the parent-child relation, playing a crucial role in the life of developing children. The quality of this relation in the early years of childhood forms the basis of future cognitive, social, and emotional development. The family has a fundamental role in individuals' health, influencing the shaping of health and disease concepts and normative and non-normative behavioral patterns. Most behavioral problems of children reflect the complex interpersonal state of the family members, particularly parents. In other words, children's behavioral problems are closely linked with dysfunctional relations among family members, particularly parents, and incorrect parenting styles [23]. Accordingly, strengthening the spiritual well-being of mothers can improve mother-child interaction and consequently, reduce behavioral disorders in students with LDs.

Furthermore, studies suggest high levels of conflict and low levels of connection in families with children with LDs [38]. The feeling of inadequacy in parenting can enter other aspects of mothers' personal life and sexual relations over time. Therefore, with the presence of a child with LD, it is natural to expect these families to be affected by the symptoms of the child's disorder and increased parental problems, particularly in mothers. This highlights the importance of spiritual well-being and managing negative feelings and emotions more than ever. People with these skills can be aware of problems

and stresses and find proper solutions for them. As a result, they can reduce their stress in the relationship with their child and improve mother-child interaction and behavioral disorders in children.

The results of this study should be generalized with caution as the statistical population was limited to mothers of girls with LDs in Shiraz city, Iran. Moreover, future studies are recommended to include fathers of children with LDs.

Conclusion

Influencing mother-child interaction, parental stress, and spiritual well-being can affect children's behavioral disorders. The results of this study suggested that the corrective model had an acceptable fit and can be considered a major step toward recognizing the factors contributing to behavioral disorders in children. This highlights the necessity of experts focusing on mothers of children with LDs and provides psychological and social support. It is recommended to hold training workshops for mothers to improve their parental stress and spiritual well-being and enhance mother-child interaction in families to reduce behavioral disorders in children.

Ethical Considerations

Compliance with ethical guidelines

The study was approved by the Ethical Committee of Islamic Azad University- Ahvaz Branch (IR.IAU.AH-VAZ.REC.1401.241).

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Authors' contributions

Conceptualization, supervision and data analysis: Saeed Bakhtiarpour and Alireza Heidari; Methodology, data collection, funding acquisition and resources: Soheila Zarghami and Saeed Bakhtiarpour; Investigation, writing-original draft, writing- review and editing: Soheila Zarghami, Saeed Bakhtiarpour and Alireza Heidari.

Conflict of interest

The authors declared no conflict of interest.

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