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Providing a Causal Model of Children's Behavioral Disorders Based on Spiritual health Family Functioning: The Mediating Role of Life Satisfaction in Hyperactive Children's Mothers in Tehran

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Abstract

Introduction: Hyperactive children can have far-reaching effects on their relationships with their family members and general atmosphere in the family by showing some behaviors such as hyperactivity, restlessness, inattention, and repulsive behaviors. This study aimed to provide a causal model of children's behavioral disorders based on family functioning and spiritual health with the mediating role of life satisfaction in hyperactive children's mothers.

Methods: This is a descriptive correlational study in terms of the method where the relationships among the proposed variables were analyzed using structural equation modeling (SEM). The statistical population included all mothers of hyperactive children who had visited psychiatric clinics in Tehran in 2020. Two hundred fifty mothers were selected from the population using purposive sampling. The tools used in this research were: Questionnaire of children's behavior disorder, Family Functioning Questionnaire, Spiritual health Questionnaire (SWBQ), and Questionnaire of Satisfaction with Life. The data were analyzed using Pearson's correlation coefficient and structural equations model.

Results: The results showed that life satisfaction has a positive and significant relationship with family functioning and spiritual health. The results also showed that family functioning and spiritual health have a reverse and significant relationship with children's behavioral disorders. Furthermore, the results showed that the general path of spiritual health has a greater effect on hyperactive child's behavioral disorders.

Conclusions: The causal model of children's behavioral disorders based on family functioning and spiritual health with the mediating role of life satisfaction has a desirable fit to decrease hyperactive behavior disorders.

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is one of the neurodevelopmental disorders appearing in the early years of children's development which has some major characteristics including attention deficit, hyperactivity, and impulsiveness that about 7% of children suffer from [1]. This disorder creates

considerable problems in children's everyday life, and also some problems in educational affairs, interpersonal and social relationships, as well as the main problems including hyperactivity, repulsiveness, and attention deficit, that often persists up to adulthood, [2]. Behavioral disorders are one of the major challenges facing hyperactive children's parents and caregivers that may threaten their health status both currently and, in the future, and impact all personal and social life aspects of these children while creating some problems for their families, disrupting their healthy growth and overshadowing the quality of the care given to them [3]. The investigations into the factors effective in the creation and persistence of such problems showed that family factors were one of the strong predictors of children's behavior problems, and the children showing fewer behavior problems had parents who applied more effective parenting behaviors [4]. Behavioral disorders in hyperactive children last longer and are more severe compared to their normal peers [5]. The neuropsychological problems delay children's growth and may impact some other aspects of their growth like their behavioral functioning. Behavioral disorders are various excessive, chronic, and deviant behaviors ranging from aggressive actions or sudden arousal to depressive and seclusive actions [6]. Children's behavior disorders include Hyperactivity, aggression, anxiety, depression, social maladjustment, fear, conduct disorder that require early diagnosis and intervention [7].

The environmental and family conditions are two effective and important factors affecting the constructive interaction between family members. Unfortunately, maladjustment and incorrect performance on the part of families may lead to some disorders including hyperactivity. Family functioning is an important factor involved in protecting and providing balanced conditions for children. Lack of proper education affects pupils' minds and thoughts thereby preventing their proper growth and making them deviate from the right path [8]. Studies have shown that children with attention deficit hyperactivity disorder (ADHD) have problems with their parents. Moreover, it is assumed that the relationship problems between parents and children are connected with the intensification and persistence of attention deficit hyperactivity disorder (ADHD) symptoms [9]. In addition, Savel et al. [10] showed in their studies that the negative parent-child interaction, poor family functioning, and experiences of discrimination in childhood aggravated behavioral disorders in adulthood. Oh et al. [11] showed in another study that the positive mother-child interaction, mothers' social support, and highly constructive performance on the part of the family were effective in preventing children's behavior problems and child abuse. Therefore, when the family patterns prove helpful in reaching the goal, the family will be efficient in terms of functioning. However, if these patterns are not helpful, and the interaction is accompanied by stress and morbid behaviors, the family assumes an inefficient role [12]. Some factors such as poor parent-child relationships, fathers having mood swings, workaholic parents, parent psychopathology, and problems in parents' relationships were found to be effective in the symptoms of attention deficit hyperactivity disorder (ADHD) [13]. In another research, the functioning of children with attention deficit hyperactivity disorder (ADHD) was investigated, and it was observed that their parents showed more negative reactions dealing with their children, and adopted fewer positive methods [14]. In another study, it was observed that mothers of children with attention deficit hyperactivity disorder (ADHD) assumed controlling and more criticizing roles, and adopted less mutual social relationships with their children, and responded less to their children [15].

Spiritual health is another variable that can reduce many problems of mothers of children with attention deficit hyperactivity disorder (ADHD) thereby reducing children's behavioral disorders. Spiritual health is defined as an inner and satisfying feeling along with constructive relationships with oneself, others, and a supreme entity in a particular cultural framework of each society leading to the meaningfulness of life and death [16]. Spiritual health consists of two components, namely spirituality, and health, and it has two aspects, namely religious well-being and existential well-being [17]. Religious well-being expresses the relationship with a supreme power i.e., God. Existential well-being is a psychosocial element expressing an individual's feelings on who they are, what they do, why they do, and where they belong to. Both religious well-being and existential well-being include transcendence and a movement beyond oneself [18]. The spiritual health in mothers improves family functioning followed by a decrease in behavior disorders. What happens in a family, and family functioning can be a key factor in creating flexibility and decreasing current and future risks connected with undesirable events and inappropriate conditions [19]. Shiraliniya, Izadi, and Aslani [20] investigated the mediating role of parenting stress, quality of the mother-child relationship, and mothers' mental health in the mother-child relationship. Therefore, mindful parenting education and improvement in mothers' mental health can be used by child and family consultants to prevent or reduce children's behavior problems. In another study, Leo et al [8] showed that parents' mental health, life satisfaction, and emotion regulation had a direct and significant relationship with behavioral disorders in Spanish adolescents. Lee & Jirask [21] also investigated the relationship between spiritual health and life satisfaction

in parents of adolescents with behavior problems. The findings showed that spiritual health had a significant relationship with life satisfaction in parents of adolescents with behavior problems. Ruden & Ikas [22] showed in their study that mothers' mental health and social relationships predicted behavioral disorders in children with autism. The more mothers' mental health and social relationships suffer from disorders, the more severe the behavioral disorders in children with autism will be. Sung et al. [23] ascertained in their study on male and female elementary school pupils that parents' mental health affected their children's levels of life satisfaction making their children show fewer behavior disorders and struggles at school.

It seems that there are some intermediary factors through which mothers' spiritual health and family functioning affect children's behavior disorders. One of these intermediary factors is satisfaction with life. Life satisfaction reflects the balance between an individual's wishes and their current conditions, and it is considered as a cognitive component of mental well-being [24]. Some studies showed that mental well-being did not decline despite the decrease in the cognitive, social, and physical abilities of some people [25]. If life satisfaction is not at a desirable level, it will lead to some mental problems such as depression, being pessimistic about life, having no hope for the future, lack of purpose, meaninglessness in life, indifference, and family problems [26]. It is necessary to empower parents, in particular mothers of children with attention deficit hyperactivity disorder (ADHD) to help them to cope with taking care of their children. There are also other aspects to empowering mothers of children with attention deficit hyperactivity disorder (ADHD), that is, empowering them to achieve the awareness that is appropriate to their children's needs (like children's maturation, recognition of drugs, recognition of comorbid disorders, appropriate behaviors, etc.). Some of these mothers are also heads of the household where they will certainly face more problems, or they have to deal with their hyperactive child together with their husbands. Hence, their mental health is disrupted where even the number of emotional divorces may increase in parents with hyperactive children. Considering the above-mentioned points, the importance and necessity of the current study are more noticeable than before. Thus, this study aimed to find the answer to the question: If the causal model of children's behavior disorders has a good fit based on the family functioning and spiritual health with the mediating role of life satisfaction in mothers of hyperactive children in Tehran.

METHOD

Study Plan

This is a descriptive correlational study where the relationships between proposed variables were analyzed using structure equation modeling. The statistical population included all mothers with hyperactive children who had visited psychiatric clinics in Tehran in 2020. Two hundred fifty mothers were selected from the population using purposive sampling. Thus, pupils' mothers visiting clinics who met the inclusion criteria (age range of 21-57, holding at least a middle school degree, and not suffering any mental disorders) were selected, and those who met exclusion criteria (not answering all questions, unwillingness to cooperate) were not selected.

Research Tools

Children's behavior disorders questionnaire: Children's behavior disorders questionnaire was developed by Michael Rutter (1967) to assess children's behavior problems. This questionnaire was turned into a 30-item questionnaire by including six new items and converting four items into two items because of similarity. The questionnaire was scored from zero to two based on a three-point Likert scale. The total score of the questionnaire ranged from 0 to 60. This questionnaire had an acceptable agreement validity. In the first study conducted by Rutter (1967) on 91 children, the percentage of agreement between questionnaire and the psychiatric diagnosis was reported to be significant at 0.001 level. The questionnaire validity was reported at 0.01 and 0.05 levels through psychiatric diagnosis agreement and Rutter's questionnaire. Rutter (1967) reported the reliability of pretest and posttest with a two-month interval 0.89. The results of a study showed that the alpha coefficients of syndrome scales based on the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders was at a satisfactory level and it ranged from 0.62 to 0.92 [27].

Spiritual health Questionnaire (SWBQ): This questionnaire was designed by Palutzian & Ellison (1982) and includes 20 items and two subscales addressing religious well-being indicating well-being resulting from the relationship with supreme power, and the existential health indicating a psychosocial element that expresses the individual's feelings about who they are, what they do, why they do it, and where they belong to. The odd-numbered questions in the test were on religious well-being assessing the extent of an individual's experience of a satisfactory relationship with God, and the even-numbered questions were on existential well-being subscales assessing the feeling of purposefulness and satisfaction with life. The scale used to answer the questions was the six-point Likert scale ranging from completely agree to completely disagree. As for the positive questions, six indicated *completely agree*, and one indicated *completely disagree*. The negative questions were reverse scored (questions 1-2-5-6-9-12-13-16-18 were negative). The total score of

spiritual health was obtained by summing up the scores of all questions. Palutzian & Ellison (1982) reported Cronbach's alpha for religious well-being and existential well-being, the whole scale was 0.91, 0.91, and 0.93 respectively. Dehshiri et al. [28] investigated the psychometric properties of this scale on students studying at Tehran University. Reliability coefficients of the retest of the whole scale, religious well-being, existential well-being was reported as 0.85, 0.78, and 0.80 respectively [28] Furthermore, Cronbach's alpha was reported as 0.90 for the whole scale of spiritual health, and it was reported as 0.82 and 0.87 for subscales of religious well-being and existential well-being respectively. In the current study, the reliability of this tool was measured and reported using Cronbach's alpha.

Family functioning questionnaire: This questionnaire has 53 items designed to assess family functioning according to the McMaster model. This tool was designed by Epstein, Bishop, and Levin in 1983. The subjects rated how well each statement described their family by selecting from among four alternative responses: strongly agree, agree, disagree, and strongly disagree., on a four-point Likert scale. The minimum score was 53 and the maximum score was 212. This questionnaire had seven subscales titled, communication, affective involvement, roles, overall functioning, problem solving, affective responsiveness, and behavior control. The designers mentioned the validity of the questionnaire through the Cronbach's alpha of seven questionnaires as Problem solving: 0.61, communication: 0.58, roles: 0.72, affective responsiveness: 0.64, affective involvement:0.65, behavior control: 0.61, and total functioning: 0.81. These values indicated that the subscales had relatively good homogeneity. Ardalan & Ardalan [29] reported the reliability of the questionnaire as 0.85. In the current study, the reliability of this tool was measured and reported using Cronbach's alpha.

Life satisfaction questionnaire: This questionnaire was designed by Diner et al. (1985). The scale has five items and each item has seven options that are scored from one (completely agree) to seven (completely disagree). The scores of this scale range from five to 35. Diner et al. (2003) reported the retest correlation coefficient of the scale as 0.87 and 0.82. Bayati, Mohammadkoochaki & Goudarzi [30] reported the validity of this scale through retest as 0.69.

Statistical Analysis

After selecting mothers for sampling and obtaining their informed written consents to participate in the test, and complying with all ethical principles, the questionnaires were given out to them and they were provided with enough time to complete the questionnaires and turn in them to the researcher. Then, the data obtained from the questionnaires were entered into SPSS 22, and AMOS24. The descriptive data were analyzed using standard deviation and means. The inferential data were analyzed using correlation coefficients and path analysis.

RESULT

The findings showed that the average age of mothers with hyperactive children was 36.55±3.35. The KS (Kolmogorov-Smirnov) values for the variables of behavioral disorder, family functioning, spiritual health, and life satisfaction were higher than 0.05 indicating that the study variables were normally distributed. Other descriptive findings on research variables were presented in Table 1.

Table 1. Descriptive findings on research variables for all subjects

Variables	Mean	Standard deviation	Number
Children's behavioral disorders	34.72	11.31	250
Family functioning	130.66	28.31	250
Spiritual health	91.16	13.17	250
Satisfaction with life	21.69	5.06	250

Table 2. Correlation coefficients among research variables in all subjects

Variables	Behavioral disorder	Family functioning	Spiritual health	Life satisfaction
Behavioral disorder	1	-	-	-
Family functioning	r=-0.275**	1	-	-
Spiritual health	r=-0.309**	r=-0.213**	1	
Satisfaction with life	r=-0.482**	r=-0.396**	r=-0.327**	1

** means P > 0.01

Table 3. Goodness of fit Indices of Initial Model

Goodness of Fit Index	x^2	df	$\frac{x^2}{df}$	IFI	TLI	CFI	NFI	RMSEA
Initial model	-	-	-	0.001	-	0.001	0.001	0.338

As presented in Table 2, correlation coefficients are significant for all correlation coefficients at P < 0.01.

The Structural equation modeling was used to assess the model proposed in this study using AMOS through maximum likelihood. The initially proposed model was obtained to explain children's behavior disorders according to the interaction among family functioning, spiritual health, and life satisfaction that have been presented in the following diagrams.

Considering the data presented in Table 3, Root Mean Square Error of Approximation (RMSEA=0.338) showed that the initial model requires to be modified. In the initial model, since the model was saturated i.e., all possible paths were drawn, it was not possible to calculate chi-squared and other indices in this model, and after the removal of the path (family functioning concerning children's behavior disorders), the model was unsaturated and it was possible to calculate chi-squared and other indices for the software. In the final model, the Root Mean Square Error of Approximation (RMSEA=0.001) showed a good fit of the model. The modified model has been presented below.

Considering the data presented in Table 4, all fit indices such as the values of chi-squared (x2), a normalized index of chi-squared (x2/df) normalized fit index (NFI), comparative fit index (CFI), incremental fit index (IFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA) indicate acceptable fit of the final model with the data.

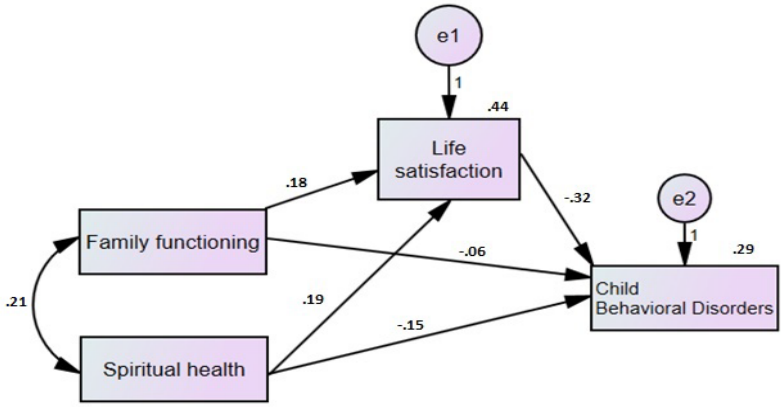

Figure 1. Initial Model in Standard Mode

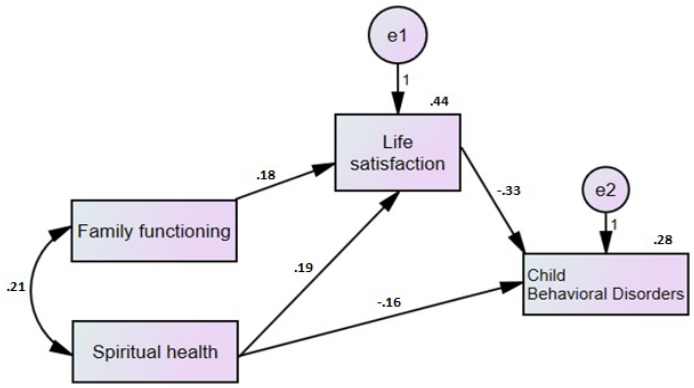

Figure 2. Final Standard Model

Table 4. Goodness of Fit Indices of Final Model

Goodness of fit index	x^2	df	$\frac{x^2}{df}$	IFI	TLI	RFI	CFI	NFI	RMSEA
Final model	1.587	2	0.452	0.99	1.006	0.97	0.001	0.99	0.001

Table 5. Coefficients of the direct and indirect effects path among research variables in the final standard model

Paths	Direct	P	Indirect	P	Total
Family functioning-children's behavioral disorders	-0.056	0.298	-0.059	0.032	-0.11
Spiritual health- children's behavioral disorders	-0.148	0.004	-0.062	0.010	-.210
Family functioning-satisfaction with life	0.181	0.001	-	-	0.181
Spiritual health-satisfaction with life	0.193	0.001	-	-	0.193
Satisfaction with life-children's behavioral disorders	-0.324	0.001	-	-	-0.324

As presented in Table 5, family functioning had a total effect of -0.11 through the indirect path on hyperactive children's behavior disorders while no direct effect was observed in the model. As for the spiritual health variable, the total effect was -0.210 indicating that spiritual health had a considerable role in hyperactive children's behavioral disorders. Moreover, the total effect of family functioning on life satisfaction was 0.181. The total effect of spiritual health on mothers' life satisfaction was 0.193, and the total effect of life satisfaction on children's behavioral disorders was -0.324. Overall, the two variables including family

functioning and spiritual health scored 0.28, accounted for the changes in the variance of hyperactive children's behavioral disorders.

DISCUSSION

The current study aimed to determine a causal model of the children's behavior disorders based on family functioning and spiritual health with the mediating role of life satisfaction in hyperactive children's mothers. For this purpose, the results indicated the indirect role of family functioning and the direct effect of spiritual health with the mediating role of life satisfaction in hyperactive children's behavioral disorders. That is, family functioning in the standard model with the mediating role of life satisfaction affects hyperactive children's behavioral disorders that are consistent with researches (10, 11, 12, 13, 14, 15). To explain these findings, it should be mentioned that family has been always a pillar of strength to solve many of one's spiritual and mental problems, and played a considerable role in creating emotional peace and strength in relationships. A family as a social institution can make children the agents of building the future of the society immune to cultural and social damages, and teach them indirectly the life skills they require. On the other hand, any disruption to family functioning makes it more difficult for the family to achieve these goals [31]. Studies show that problem solving (family's ability to solve its problems), communication (effectiveness, clarity, and accuracy of information transmission in the family), roles (description of self-efficacy based on the duties assigned to the family), emotional involvement (family's ability members to respond to appropriate feelings), emotional responsiveness (quality of family members' interests, concerns, and investments in each other), and behavior control (description of behavior standards) are the important aspects of family functioning [32], and in this study, the good performance of the family with hyperactive children has decreased the behavioral disorders to some extent in their children. In addition, family is considered an important sociocultural center affecting children's mental aspects. It is axiomatic that healthier children will be raised by increasing the relationship and integrity in the family. Family functioning has completely direct effects on children. Furthermore, different methods of parenting, in case of failing to provide proper education, will have undesirable impacts on children which sometimes could be irreparable. Moreover, these impacts in turn may create some further problems that may persist for many years in some cases. Family functioning provides family members with physical and mental well-being. The family can guarantee the physical and spiritual health of its members, and on the other hand, it can endanger these both directly and indirectly, and create serious problems for children [4].

As for the role of spiritual health in behavioral disorders with the mediating role of life satisfaction in this study, it should be acknowledged that parents' acceptance has a stronger effect on hyperactive children's behavioral disorders which is consistent with the results of the researches (20, 21, 22, 23 and 24). To justify these findings, we should mention that spiritual health relies on an individual's real faith, religious beliefs, and motivation, and this component is naturally in connection with humans' excellence and perfection, especially their psychological well-being. Furthermore, it seems that spirituality is connected with humans' feelings of meaningfulness, purposefulness, perfection, power, and dominance. In fact, religion and spirituality give meaning to life and prevent humans from believing in nihilism. It is in such an atmosphere where an individual is disentangled from self-centeredness and whims and achieves psychological health. This opens up the opportunity for personal growth and leads people towards perfection so that they dominate over the surrounding environments, especially challenging environments like living with difficult people [33]. According to the stress theory, the personal beliefs about oneself and the world are the resources that affect an individual's responses and attitudes towards difficult conditions and situations in life. The beliefs in God, destiny, fatalism, and other beliefs about the natural law and order controlling the world, are the beliefs enabling individuals to create meaning out of the difficult reality of life (having hyperactive children), and keep up hope. These beliefs as huge and powerful resources, can decrease negative emotional responses when facing stressful situations [34]. In the following, it can be said that spiritual health modifies and changes people's recognitions to improve hope in life through a metaphysical approach, and leads to a positive effect on the interpretation and attaching meaning to the destructive events, failures, and difficulties. Hyperactive children's mothers may be more prone to depression and their motivation may decrease if their expectations about having healthy children, feeling sinful, wrong, and distressing judgments of others are not fulfilled. Therefore, enhancing spiritual health makes these mothers to modify their beliefs and find meaning in their lives so that they will feel less emotional problems, and move towards transcendental goals by the new motivation and power they gain [35]. Some pieces of evidence have shown that spiritual beliefs and contrasts in stressful situations help many people. This is the case because spirituality allows people to concentrate on transcendental ideas and beliefs, and thus decrease their concentration on everyday mental pressures [36]. Developing moral beliefs along with coping behaviors like the relationship with oneself, others and God enhances hope and decreases anxiety in difficult and distressing situations, and improves healthy behaviors [37]. Furthermore, spirituality clarifies one's life goals,

and provides them with peace of mind in painful and intimidating conditions, and enables them to accept unchangeable events. According to this viewpoint, the relationship with a supreme power makes it possible to access higher values and goals, leading to better functioning. Still, another result of spirituality is feeling greater power and inner peace that enable an individual to accept the undesirable situations in critical and difficult situations and enhanced mothers' satisfaction of life in this study [38]. With regard to the results of this study, hyperactive children's mothers enjoyed proper spiritual health and had in fact somehow accepted their children's problems, and the acceptance and nondenial of their children's problems made them put in most of their energy to forge a proper relationship with their hyperactive children. Therefore, the relative satisfaction that mothers draw from the acceptance of this issue originates from their spiritual health, and the acceptance enables them to seek treatment and proper relationships with their hyperactive children rather than denying or rejecting them.

CONCLUSION

Both family functioning and spiritual health can decrease hyperactive children's behavioral disorders through life satisfaction. Therefore, the positive family functioning in positive interactions and proper attention to hyperactive children can enhance understanding about acceptance of this issue. Additionally, the parents enjoying spiritual health can create a warm and intimate environment in the family and help increase the self-confidence, self-esteem, and self-control in children.

This study includes some limitations like any other study. This study was conducted only on mothers of hyperactive children in Tehran. Thus, care should be taken when generalizing these results to other mothers and educational settings. Another limitation of this study is that it cannot be generalized to fathers. It is recommended that this study be conducted on fathers of hyperactive children so as to be able to generalize it more confidently. In addition, using this model with parents' social support as the mediating variable is recommended.

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CONFLICT OF INTEREST

There is no conflict of interests among the authors

ETHICAL CONSIDERATIONS

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AUTHOR CONTRIBUTION

Data introduction, collection, and analysis were carried out by all the authors.

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