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Relationship between Spiritual Intelligence and Life Satisfaction in Mothers of Children with Cancer

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Abstract

Background and Aim: Mothers of children with cancer experience a significant psychological pressure, which reduces their satisfaction with life. Spiritual intelligence helps these mothers to adopt to this situation, and protects them against mental disorder and adverse life events. The purpose of this research was to determine the relationship between spiritual intelligence and life satisfaction among the mothers of children with cancer.

Materials and Method: This is a descriptive and correlational study that was conducted in 2020 on 68 mothers of school age children with cancer (6 to 12 years old) hospitalized in the oncology departments of Ali Asghar Hospital in Tehran, Iran. King's spiritual intelligence questionnaire, Diener's life satisfaction questionnaire and demographic information questionnaire were used to collect the data, which were analyzed by SPSS/23 software, using Pearson's correlation and regression tests.

Results: The findings of this study showed a positive and significant relationship between life satisfaction and components of spiritual intelligence (critical existential thinking, personal meaning production, transcendental awareness, and conscious state expansion), ($P<0.05$).

Conclusion: Paying attention to spiritual intelligence and cultivating it increases life satisfaction in people who have been affected by cancer. Therefore, interventions to enhance spiritual intelligence is recommended for the mothers of children with cancer in order to help them deal with their situation and increase their life satisfaction.

Keywords: Intelligence, Life Satisfaction, Mothers, Child.

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Introduction

Cancer has a significant impact on the physical, social, psychological and spiritual health of children and their families [1]. Mothers of children with cancer experience a significant psychological pressure, which reduces their life satisfaction and forces them to live with a sense of guilt and distress [2]. Also, the unique nature of mother-child relationship causes these mothers to have stressful experiences from the time of cancer diagnosis to treatment and follow-ups, which reduce their life satisfaction and quality of life. In modern pediatric medicine, mothers play an important role in the children's care and treatment, and are also considered as part of treatment team. This can negatively impact the mothers' relationship with other family members, decrease their productivity in the family, and even endanger their physical and mental health, while imposing a significant cost on the healthcare system [3]. This stressful situation causes the mother of cancer children to lose balance in life and become dissatisfied with life. Life satisfaction reflects the balance between a person's desires and his current situation, and the greater this balance is, the greater the level of satisfaction with life would be [4].

Spiritual intelligence, like all types of intelligence, includes a cognitive and behavioral adaptation to problem solving, which brings about the highest level of development in cognitive, moral, emotional and interpersonal skills. This intelligence gives people a general view of life and experience of events, which allow them to acquire higher level of knowledge. Spiritual intelligence has two constructs of intelligence and spirituality, which make people to feel that they can handle any situation [5]. Research has shown that mothers of children with cancer have an unfavorable mental and physical condition, disrupted lifestyle, low quality of life and economic concerns. A study showed that among the mothers of children with cancer, 15.7% had favorable physical condition, 1.7% had favorable psychological condition, 3.5% had favorable social condition and 47% had favorable mental-spiritual condition [6]. Therefore, the stressful situation that these mother experience causes them to lose balance between personal life and current situation, and as a result, their satisfaction with life decreases. In health assessment, it is important to determine life satisfaction, because there is a close relationship between physical/mental health and life satisfaction [7]. As pointed out in many studies, a high level of spiritual intelligence leads to an increase in life satisfaction, and also high spiritual intelligence implies a sense of satisfaction with oneself and life [8].

Considering the complications and consequences of cancer, it is important to identify the protective psychological factors such as optimism, life satisfaction and spiritual intelligence that can reduce the adverse effects of psychological distress and increase the resilience and tolerance of affected people. We know that cancer in children has various effects on the lives of children and their families, especially mothers. The findings of numerous studies conducted on the relationship between spirituality and life satisfaction show the importance and influence of spirituality on various aspects of human life, especially in

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Iranian culture. There is also a shortage or even lack of evidence in the area of spirituality and life satisfaction in mothers of children with cancer. Therefore, the present study was conducted to investigate the relationship between spiritual intelligence and life satisfaction in mothers of children with cancer.

Methods

This is a descriptive-correlational study that was conducted at the oncology departments of Ali Asghar Children's hospital in Tehran in 2020. The samples of this study included mothers of school age children with cancer (6 to 12 years old) hospitalized in the oncology department. The criteria for entering the study included; the ability to read and write, being a biological mother, whose child has been diagnosed with cancer for at least a month, and being the mother of a school age child (6-12 years old) with cancer. Exclusion criteria also included; unwillingness to participate in the study, and death or transfer of the child to another hospital.

The sample size was calculated using the following formula and taking into account the first type error of 5% and the confidence factor of 95%, and 68 qualified mothers were selected to participate in the research using available sampling method:

$$n = \left(\frac{z_{1-\frac{\alpha}{2}} + z_{1-\beta}}{0.5 \ln(\frac{1+r}{1-r})} \right)^2 + 3$$

Demographic information questionnaire (including child's age and sex, mother's age and education, and number of family members), King's Spiritual Intelligence Questionnaire [5] and Diener's Life Satisfaction Questionnaire [9] were used to collect the data.

King's spiritual intelligence questionnaire (2008) consists of 24 questions and four subscales (critical existential thinking, production of personal meaning, expansion of the state of consciousness, transcendental consciousness) on a five-option Likert scale ranging from completely agree (score 4) to completely disagree (score 0). The highest score in this scale is 96 and the lowest score is 0. A higher score indicates greater spiritual intelligence.

Diener's Life Satisfaction Questionnaire (1985) has 5 questions that measure the cognitive component of subjective well-being. This questionnaire has 48 questions and 3 factors in factor analysis. Its 10 questions were related to life satisfaction, which after numerous reviews were finally reduced to 5 questions and used as a separate scale. The questionnaire is based on a seven-option Likert scale, ranging from strongly disagree (score 1) to completely agree (score 7). The highest score in this scale is 35 and the lowest score is 5 [6]. Face and content validity methods were used to evaluate the validity of these questionnaires, which was carried out by a team of 12 people, consisting of nursing, medicine and psychology specialists. Corrections were made to the tools according to the corrective comments and suggestions of the specialists. Reliability of the questionnaires was also determined by Cronbach’s alpha after conducting a pilot study on 20 mothers, which resulted in the Cronbach’s alpha coefficient of 0.91 for the spiritual intelligence questionnaire and 0.94

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for the life satisfaction questionnaire. The validity and reliability of the spiritual intelligence and life satisfaction questionnaires have also been confirmed in various studies with Cronbach's alpha coefficient of 0.91 and 0.93, respectively [9, 11].

Before commencing the sampling, an approval was obtained from the Research Deputy of Tehran Islamic Azad University of Medical Sciences (IR.IAU.TMU.REC.1399.487). The necessary permission for sampling was also obtained from the hospital officials. Then, the researchers attended the hospital and proceeded to collect the data. Sampling began by identifying the mothers of children with cancer, who met the inclusion/exclusion criteria. At first, all the mothers were informed about the method and objectives of the study and ethical consent was obtained from them. They were also ensured about the confidentiality of their personal information and the possibility of withdrawal from the study at any time. Then, with full compliance with the ethical principles, the questionnaires were distributed anonymously among the mothers. The researchers visited the hospital every day from morning to evening for 3 months (from January to March 2020) and selected the eligible samples before distributing the questionnaires among them. Mothers answered the questionnaires in the presence of the researcher, and if they had any problems or ambiguities, the researcher clarified it for them.

It should be noted that all the ethical principles related to the research, such as obtaining written informed consent, explaining the objectives and methods of the study and so on, were observed in this study. For data analysis, first the collected data were entered into SPSS/23 software and descriptive statistics (frequency, percentage, mean and standard deviation) were used to describe them. Then, Pearson's correlation coefficient and linear regression were used to analyze the data at a significant level of 0.05.

Results

Majority of the mothers were between 35 and 40 years old (39.70%), housewives (61.75%), and married (85.30%). They mainly had bachelor's degree (44.12%), a family with 4 members (44.13%), a male child (55%) and inadequate income (80%). Most children in this study had leukemia (61.70%). The mean and standard deviation of life satisfaction and spiritual intelligence of the mothers are given in Table 1. The results showed a positive and significant relationship between spiritual intelligence, its components and life satisfaction of the mothers ($r=0.61$, $p<0.001$). This means that by the increase of spiritual intelligence, life satisfaction also increases (Table 2).

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Table 1. Mean and standard deviation of life satisfaction and spiritual intelligence and its components in the mothers of children with cancer

Variables	Mean	SD	K-S		P
Life satisfaction	34.13	16.44	0.074		0.540
Total score of spiritual intelligence	89.85	6.15	0.015		0.082
Critical existential thinking	15.74	8.53	0.105		0.064
Personal meaning production	14.92	8.94	0.001		0.054
Transcendental awareness	11.73	6.90	0.072		0.079
Conscious state expansion	11.12	6.58	0.079		0.063

Table 2. Correlation matrix between life satisfaction and spiritual intelligence and its components among the mothers of children with cancer

Components	Life satisfaction	Critical existential thinking	Personal meaning production	Transcendental awareness	Conscious state expansion	Spiritual intelligence
Life satisfaction	1					
Critical existential thinking	0.249	1				
Personal meaning production	0.355	0.521	1			
Transcendental awareness	0.409	0.618	0.057	1		
Conscious state expansion	0.050	0.316	0.083	0.034	1	
Spiritual intelligence	0.629	0.518	0.458	0.025	0.048	1

A simultaneous linear regression test was used to find out whether life satisfaction can be predicted by spiritual intelligence. In order to use regression analysis, first the necessary assumptions were checked, including the independence of errors, and the difference between actual values and the values predicted by the regression equation. The value of tolerance coefficient for each of the predictors was 0.39 for critical existential thinking, 0.51 for personal meaning production, 0.63 for transcendental awareness, and 0.38 for conscious state expansion. Also, the variance inflation factor for each of the predictors was 2.52 for critical existential thinking, 1.94 for personal meaning production, 1.57 for transcendental awareness and 2.59 for conscious state expansion. These values show a low linearity between the variables according to the analysis of assumptions. The value of correlation coefficient (R) between the variables was 0.61, which showed a relatively strong correlation between the subscale of spiritual intelligence and life satisfaction. The value of adjusted coefficient of determination was also 0.37, which showed only 37% of the total changes in life satisfaction could be determined by the predictors (Table 3).

The predictors also had a relatively good explanatory power and were able to explain 37% of the changes in life satisfaction (Table 4)

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Table 3. Regression model summary

Standard error of estimate	Adjusted R^2	R^2	R
5.25	0.30	0.37	0.61

Table 4. Significance of the regression model for life satisfaction based on the subscales of spiritual intelligence

Sources of change	Sum of squares	df	Mean square	F	P
Regression	2157.294	15	143.820	5.214	0.001
Remaining	3640.706	132	27.581		
Total	5798	147			

Discussion

The aim of present study was to determine the relationship between spiritual intelligence and life satisfaction in the mothers of school-aged children with cancer hospitalized in Ali Asghar Medical Center in 2020. The results showed a positive and significant relationship ($r=0.61$, $p<0.001$) between spiritual intelligence and its components, and life satisfaction of the mothers, meaning that life satisfaction increased with the increase of spiritual intelligence and its components. This study showed that all components of spiritual intelligence are able to predict life satisfaction at the 0.01 level.

In this regard, no study was found to examine the relationship between spiritual intelligence and life satisfaction in mothers of children with cancer, but the results of other studies are in line with the findings of present study. For instance, Moradi et al. (2021) conducted a study to investigate the relationship between spiritual intelligence and life satisfaction of 150 students at Islamic Azad University, Bukan branch. The results showed a statistically significant relationship between spiritual intelligence and life satisfaction of the students ($p=0.02$), [10]. Moulai et al. (2019) investigated spiritual intelligence and life satisfaction of 35 mental health nurses in Erbil, Iraq. They also showed a significant and positive relationship between the spiritual intelligence and life satisfaction [11]. In 2023, Nemati Jahan et al. conducted a study with the aim of predicting life satisfaction based on emotional intelligence, spiritual intelligence and mental health of 360 couples in Tehran. Their results showed that mental health has a great contribution in predicting life satisfaction, and also changes in emotional intelligence (Beta=0.254), spiritual intelligence (Beta=0.186) and mental health (Beta=0.429) can predict life satisfaction [12]. Faiz Abadi conducted a study to examine the relationship between spiritual intelligence and life satisfaction among 384 female high school students in Tehran in 2022. Pearson's test in their study revealed a significant and direct relationship between spiritual intelligence and life satisfaction. The multivariate linear regression also showed that the dimensions

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of spiritual intelligence can predict life satisfaction [13].

Senmar et al. (2023) in a study investigated the relationship between spiritual intelligence, life style and life satisfaction of medical students, and showed a positive and significant relationship between spiritual intelligence and life satisfaction ($r=0.27$, $p>0.05$)[14].

Skrzypińska considers spirituality and finding the meaning of life as essential part of human existence. Spiritual intelligence is a potentially important construct for expanding people's understanding of the psychological determinants of human performance. There is also a relationship between spiritual intelligence and other elements that are important to human functioning and well-being. Spiritual intelligence is considered to facilitate one's ability to search for the meaning of life [15].

Kasler et al. (2024) conducted a study entitled: "Life satisfaction in adults: The role of emotional and spiritual intelligence", and showed that spiritual intelligence is the main determinant of life satisfaction. Also, participants who had emotional intelligence above a certain threshold obtained the highest mean score of life satisfaction [16]. These results are in line with the findings of present study.

These findings indicate that people, who have higher spiritual intelligence, have certain characteristics such as the ability to deal with difficulties, high level of self-awareness and self-control, and the ability to be satisfied with life.

One of the limitations of present study was the environmental noise, which could affect the response of the participants. The researcher controlled the noise to some extent by creating a suitable, calm and safe environment for all participants. Also, the individual, social and cultural differences between the mothers had a potential to affect their understanding of the research questions and their responses, which could not be controlled by the researcher. We suggest future studies to investigate the effect of spiritual intelligence cultivation techniques on the life satisfaction of mothers of children with cancer.

Conclusion

According to the findings of this study, paying attention to spiritual intelligence and cultivating it increases life satisfaction in people affected by cancer. Since spiritual intelligence is a subject that can be taught to people, the officials of health and treatment centers can design and implement training courses for patients and their families to improve their copping skills and spiritual intelligence, which in turn increase their life satisfaction.

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Conflict of interest disclosures

There is no conflict of interest in this study.

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