

## Spiritual Intelligence and Its Relationship to the Quality of Life Among Mothers of Children with Cancer in Jordan

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**Citation:** Tohal, S. A. M., Banat, S. M., Amouri, L. J. & Alfrehat, A. A. (2025). Spiritual Intelligence and Its Relationship to the Quality of Life Among Mothers of Children with Cancer in Jordan, *Journal of Cultural Analysis and Social Change*, 10(3), 1629-1640. <https://doi.org/10.1064753/jcasc.v10i3.2637>

**Published:** December 01, 2025

### ABSTRACT

The present study aimed to explore the level of spiritual intelligence and its relationship with the quality of life among mothers of children with cancer in Jordan, and to determine whether this relationship varies according to the child's gender, family income, the mother's educational qualification, and the child's birth order. The study sample consisted of 56 mothers of children with cancer from the governorates of Amman, Irbid, Zarqa, and Balqa in Jordan. To achieve the study's objectives, the researchers developed two measurement scales: a Spiritual Intelligence Scale comprising 25 items and a Quality of Life Scale comprising 33 items. The validity and reliability of both instruments were verified before being administered to the study sample. The results indicated that both spiritual intelligence and quality of life among mothers of children with cancer were high. Moreover, there were no statistically significant differences in spiritual intelligence or quality of life based on the variables of the child's gender, family income, the mother's educational qualification, or the child's birth order. The findings also revealed a positive correlation between spiritual intelligence and quality of life. In light of these results, the researchers recommend conducting further studies focusing on mothers of children with cancer, considering additional variables not addressed in the present study.

**Keywords:** Spiritual Intelligence, Quality of Life, Mothers of Children with Cancer, Pediatric Cancer.

### INTRODUCTION

Cancer is one of the most chronic and life-threatening diseases affecting children, due to the long duration and nature of chemotherapy, which is often accompanied by side effects such as fatigue, weakness, nausea, hair loss, and sometimes breathing difficulties. Childhood cancer has become a global health issue of growing concern. According to the World Health Organization (WHO, 2023), approximately 400,000 children and adolescents under the age of 19 are diagnosed with cancer annually worldwide.

In Jordan, according to the Jordan Cancer Registry (2022), the rate of childhood cancer was 124.5 cases per one million children, with a slightly higher prevalence among males (Ministry of Health, 2022).

Having a child with cancer represents a psychological and social crisis for the entire family from the moment of diagnosis and throughout the treatment journey. The mother typically bears the greatest share of responsibility

for caring for the child and monitoring their health condition, exposing her to psychological stress (such as anxiety and fear about the child's life), physical strain (such as fatigue from prolonged care), and social challenges that disrupt family routines (Al-Sharabini, 2024).

In addition, many mothers experience insufficient psychological and social support, which negatively affects their overall quality of life, including emotional, physical, social, and economic aspects (Toledano-Toledano et al., 2020).

Research by Gressel et al. (2024) indicated that mothers of children with chronic illnesses, such as cancer, exhibit a significant decline in quality of life due to the ongoing stressors associated with caregiving. Similarly, Bouchlaq (2019) argued that excessive preoccupation with the child's care and neglect of personal needs may lead to decreased life satisfaction and psychological stability among mothers.

The World Health Organization (WHO, 1995) defines *quality of life* as an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns.

Abu-Ghazaleh (2016) emphasized that quality of life encompasses positive feelings such as satisfaction and happiness, as well as the individual's ability to fulfill basic needs within a supportive environment that provides health, social, educational, and psychological services.

Quality of life thus reflects a mother's ability to adapt to her child's illness, care for her child effectively, and find positive meaning in her life (Al-Salmi & Al-Ghanami, 2023). It is a multidimensional construct, including psychological, physical, social, and environmental dimensions (WHO, 1995).

According to Akbari et al. (2018), the quality of life of mothers caring for sick children is influenced by factors such as social support, mental health, emotional regulation, and coping capacity. Conversely, low quality of life may lead to psychological complications such as chronic depression and heightened anxiety, which undermine caregiving ability (Farshad et al., 2020).

A mother's perception of her own quality of life is relative, varying in importance according to multiple factors essential for fulfilling psychological, physical, spiritual, and mental needs — including social support, family structure, social role, values, autonomy, health care, daily activities, nutrition, education, financial status, self-concept, satisfaction, and spirituality (Tantawi, 2016).

To help mothers overcome these challenges and improve their quality of life, attributes such as patience, wisdom, optimism, and deep faith play a crucial role. One important psychological factor contributing to this resilience is spiritual intelligence (Al-Soqabi, 2020).

Spiritual intelligence refers to the ability to utilize spiritual and moral values to enhance psychological and social adjustment and to find positive meaning in life when facing adversity (Al-Salmi & Al-Ghanami, 2023).

According to Gardner (2000) and his *Theory of Multiple Intelligences*, spiritual intelligence provides a moral and existential dimension to other forms of intelligence, as it fosters meaning, optimism, and psychological adaptability.

Skrzypińska (2021) defines spiritual intelligence as *the individual's ability to act wisely and compassionately, maintaining inner and outer balance regardless of external circumstances*. Similarly, King (2008) described it as a set of mental capacities focused on non-material aspects such as heightened awareness, existential reflection, and transcendence.

Buzan (2005) identified several factors influencing the level of spiritual intelligence, including personal characteristics (gender, age, mindset, and commitment), family factors (cohesion, flexibility, and religious values), and socio-cultural elements (social and ethical values that foster spiritual growth).

Furthermore, Ahoei et al. (2017) noted that individuals with high spiritual intelligence tend to possess deep understanding, emotional balance, patience, optimism, psychological flexibility, and acceptance of destiny.

Enhancing the spiritual dimension within complementary care programs for mothers of children with cancer can significantly alleviate psychological distress and improve their overall well-being, serving as a source of emotional and spiritual comfort (Gressel et al., 2024).

Numerous studies have confirmed the role of spiritual intelligence in reducing anxiety and depression among mothers, particularly those caring for children with cancer (Atika et al., 2024; Rezavandi et al., 2018; Al-Quraini, 2024).

## PREVIOUS STUDIES

Several previous studies have examined the relationship between spiritual intelligence and quality of life among mothers of children with cancer or other chronic conditions.

Salimi et al. (2017) investigated the relationship between health-related quality of life and psychological resilience among mothers of children with cancer. Using a cross-sectional design with a sample of 145 mothers of children aged 1–18 years in Tabriz, Iran, the results indicated that the mothers had low levels of quality of life across

several domains—physical, emotional, social, cognitive, communication, anxiety regarding the child, energy/fatigue, and family functioning—scoring between 41–45% on the PedsQL scale.

Rezaei et al. (2018) assessed the quality of life of Iranian mothers with children diagnosed with cancer using a descriptive-analytical approach with 252 participants from hospitals in Sari, Iran. The study measured four dimensions of quality of life (physical, psychological, social, and environmental) and found a moderate overall mean score of 61.35 out of 100. The lowest domain was psychological, followed by social, indicating the strong impact of psychological stress and social isolation. Higher education, marital stability, and income were significantly associated with higher quality of life.

Rezavandi et al. (2018) examined the relationship between spiritual intelligence and depression among parents of children with cancer in Tehran, using a descriptive correlational design with 156 participants (both mothers and fathers). Results revealed that both mothers and fathers had moderate levels of spiritual intelligence and depression. A significant negative correlation was found between spiritual intelligence and depression, indicating that higher spiritual intelligence is associated with lower depressive symptoms.

Al-Soqabi (2020) evaluated the effectiveness of a positive psychology-based program designed to enhance positive thinking among mothers of children with cancer in Saudi Arabia. Using a quasi-experimental design with 10 participants, the study found significant improvement in positive thinking levels post-intervention, indicating the potential benefits of psychological skills training such as gratitude, self-compassion, and perseverance.

Toledano-Toledano et al. (2020) conducted a cross-sectional study in Mexico to analyze the relationship between psychological stress and quality of life among parents of children with chronic illnesses. Results showed that mothers experienced high levels of stress, leading to a noticeable decline in psychological and social well-being. Positive predictors of quality of life included resilience, family functioning, social support, older age, higher education, and higher income, while higher depression scores predicted lower quality of life.

Farshad et al. (2020) studied the prediction of quality of life based on spiritual intelligence and psychological resilience among mothers of children with behavioral problems in Iran. Findings revealed a significant positive correlation between quality of life and both spiritual intelligence ( $\alpha=0.59$ ) and resilience ( $\alpha=0.63$ ), explaining 66% of the variance in quality of life.

Vieira et al. (2022) conducted an integrative review (2010–2020) on the quality of life of mothers of children with cancer, including 12 empirical studies in Portuguese, English, and Spanish. The review concluded that the diagnosis of a child with cancer greatly affects the mother's quality of life across multiple domains. However, there was a lack of research addressing the specific role of spiritual intelligence and limited geographic diversity among studies.

Lavarzaei et al. (2023) examined the impact of a quality-of-life-focused training program on the psychological and social well-being of mothers of children with cancer using a quasi-experimental design with 200 mothers (experimental and control groups). Results indicated a significant improvement in the intervention group, including reduced stress and anxiety, increased satisfaction, and improved hope. The program covered relaxation techniques, spiritual support, self-help groups, and family counseling.

Al-Saliti et al. (2025) investigated the relationship between spiritual intelligence and marital satisfaction among 347 mothers of children with disabilities in Irbid, Jordan. Results showed that the mothers' spiritual intelligence was moderate ( $M = 2.07$ ,  $SD = 0.33$ ), and no significant differences were found based on education, economic level, type of disability, or duration since diagnosis. However, there was a significant positive correlation between spiritual intelligence and marital satisfaction.

### Commentary on Previous Studies

The reviewed literature demonstrates a growing scholarly interest in exploring spiritual intelligence and quality of life among mothers of children with chronic illnesses or disabilities.

Studies such as Salimi et al. (2017) and Rezaei et al. (2018) reported low to moderate levels of quality of life, reflecting the heavy psychological and social burden imposed by the child's illness. In contrast, Toledano-Toledano et al. (2020), Vieira et al. (2022), and Lavarzaei et al. (2023) highlighted that quality of life can be improved through psychosocial support and educational interventions focusing on resilience and emotional coping.

Regarding spiritual intelligence, Rezavandi et al. (2018) found it to be moderate among parents of children with cancer, whereas Al-Saliti et al. (2025) demonstrated that spiritual intelligence is not strongly influenced by demographic variables, but rather by personal, cultural, and faith-based factors. This supports the notion that spiritual intelligence is an existential and moral capacity that helps individuals adapt to adversity beyond socioeconomic status.

## Statement of the Problem

Reports from the Jordanian Ministry of Health (2024) indicate a 40% increase in cancer incidence across all age groups since 2015. The National Cancer Registry (2022) recorded 312 childhood cancer cases, accounting for approximately 4% of total registered cancer cases in Jordan.

This steady rise places a growing burden on the healthcare system and on affected families.

As the number of children diagnosed with cancer increases, so does the number of families experiencing long-term psychological and emotional distress. Mothers often bear the primary caregiving role, which can significantly affect their mental, physical, and social well-being.

For example, Rezaei et al. (2018) found that many mothers of children with cancer in Iran had low quality of life due to psychological and economic pressures related to caregiving.

On the other hand, previous studies demonstrated that spiritual intelligence plays a key role in coping with stress and enhancing psychological health. Rezavandi et al. (2018) reported a significant inverse correlation between spiritual intelligence and depression among parents of children with cancer, suggesting that faith and spiritual awareness can strengthen resilience and improve quality of life.

Accordingly, this study seeks to examine the relationship between spiritual intelligence and quality of life among mothers of children with cancer in Jordan.

## Research Questions

1. What is the level of spiritual intelligence among mothers of children with cancer in Jordan?
2. What is the level of quality of life among mothers of children with cancer in Jordan?
3. Does the level of spiritual intelligence differ according to the child's gender, family income, mother's educational qualification, or the child's birth order?
4. Does the level of quality of life differ according to the same demographic variables?
5. Is there a statistically significant correlation between spiritual intelligence and quality of life among mothers of children with cancer ( $\alpha \leq 0.05$ )?

## Objectives of the Study

The study aimed to:

1. Determine the levels of spiritual intelligence and quality of life among mothers of children with cancer in Jordan.
2. Identify possible differences in both variables according to demographic characteristics (child's gender, family income, mother's education, and birth order).
3. Examine the correlation between spiritual intelligence and quality of life.

## Significance of the Study

### *Theoretical Significance:*

This study contributes to the growing body of literature on spiritual intelligence and quality of life, particularly in the context of mothers of children with cancer, a group that has received limited empirical attention in Arab research. It also enriches the psychological and educational discourse on how spiritual intelligence can serve as a protective factor enhancing mothers' well-being.

### *Practical Significance:*

Understanding the quality of life and spiritual intelligence of mothers in this context provides a basis for designing intervention and counseling programs aimed at improving their coping strategies, mental health, and life satisfaction.

The study's findings can guide practitioners, researchers, and policymakers in developing spiritually grounded psychological support programs in hospitals and community health settings.

## Study Concepts

### *Spiritual Intelligence:*

Defined as *"the ability to utilize spiritual attributes to address existential questions, perceive profound values and meanings, and interact with them in a way that enhances self-understanding and one's relationship with the world"* (Gardner, 2000).

**Operational Definition:** The score obtained by each mother on the Spiritual Intelligence Scale developed for this study.

### *Quality of Life:*

Defined by the World Health Organization (WHO, 1995) as *"an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns."*

**Operational Definition:** The score obtained by each mother on the Quality of Life Scale used in this study.

**Cancer Patients:**

Defined as “individuals diagnosed with malignant neoplasms, regardless of disease stage or duration, including all age groups—whether under active treatment, follow-up, palliative care, or remission” (WHO, 2024).

**Children with Cancer:**

Children diagnosed with cancer who receive treatment and care at Al-Amal Cancer Center in Jordan.

**Mothers of Children with Cancer:**

Defined as the primary providers of physical, emotional, psychological, and spiritual care to their children diagnosed with cancer, both at home and outside the home — representing a central role in supporting the child during illness (Abbasnezhad et al., 2022).

**Operational Definition:** In this study, the term refers specifically to mothers of children diagnosed with cancer and receiving care at the King Hussein Cancer Center in Amman, Jordan.

**STUDY BOUNDARIES AND LIMITATIONS**

1. **Human Boundaries:** The study was limited to mothers of children diagnosed with cancer.
2. **Spatial Boundaries:** Conducted at the King Hussein Cancer Center in Jordan.
3. **Temporal Boundaries:** The study was implemented during June 2025 in Jordan.
4. **Generalizability:** The findings are limited to populations similar to the study sample and to the accuracy of responses provided by participants.

**METHODOLOGY**

This study adopted a descriptive correlational design to investigate the relationship between spiritual intelligence and quality of life among mothers of children with cancer in Jordan.

**Study Population and Sample**

The population consisted of all mothers of children diagnosed with cancer in Jordan. The study sample included 56 mothers whose children were receiving treatment at the King Hussein Cancer Center. Participants were selected using a convenience sampling method.

Table 1 below presents the distribution of participants by the child's gender, family income, mother's educational qualification, and the child's birth order.

**Table 1.** Distribution of the study sample by demographic variables

| Variable                  | Category                | Frequency | Percentage (%) |
|---------------------------|-------------------------|-----------|----------------|
| Child's Gender            | Male                    | 36        | 64.3           |
|                           | Female                  | 20        | 35.7           |
| Family Income             | Less than 500 JOD       | 36        | 64.3           |
|                           | More than 500 JOD       | 20        | 35.7           |
| Educational Qualification | Below Bachelor's Degree | 25        | 44.6           |
|                           | Bachelor's or Higher    | 31        | 55.4           |
| Child's Birth Order       | First                   | 17        | 30.4           |
|                           | Middle                  | 23        | 41.1           |
|                           | Last                    | 16        | 28.6           |
| Total                     |                         | 56        | 100.0          |

**Study Tools:** The researchers used two tools to collect data for the study:

**First: The Spiritual Intelligence Scale**

The scale was developed by the researchers based on a review of existing literature and previous studies and research, such as those by Rezavandi et al. (2018) and Farshad et al. (2020). The scale consists of 25 items distributed across three dimensions: the ability to transcend (items 1-11), the ability to enter higher spiritual states of consciousness (items 9-18), and the ability to use spirituality to address problems (items 16-25).

**Construct Validity**

To verify the scale's construct validity, the correlation between each item and its corresponding dimensions, as well as the overall scale score, was analyzed. This is shown in Table 2.

**Table 2.** Correlation coefficient of the item with the dimensions and the total score of the spiritual intelligence scale

| The ability to use spirituality to | The ability to enter higher spiritual | The ability to transcend |
|------------------------------------|---------------------------------------|--------------------------|
|------------------------------------|---------------------------------------|--------------------------|

| confront problems    |                             |    | states of consciousness |                             |    |                      |                             |     |
|----------------------|-----------------------------|----|-------------------------|-----------------------------|----|----------------------|-----------------------------|-----|
| Correlation by Scale | Correlation by Dimension    | NO | Correlation by Scale    | Correlation by Dimension    | NO | Correlation by Scale | Correlation by Dimension    | NO. |
| .626**               | .700**                      | 22 | .563**                  | .651**                      | 12 | .569**               | .622**                      | 1   |
| .509**               | .691**                      | 23 | .712**                  | .755**                      | 13 | 0.248                | .385**                      | 2   |
| .700**               | .824**                      | 24 | .550**                  | .534**                      | 14 | .536**               | .601**                      | 3   |
| .742**               | .813**                      | 25 | .420**                  | .502**                      | 15 | .491**               | .702**                      | 4   |
| .673**               | .700**                      | 26 | .763**                  | .769**                      | 16 | .628**               | .669**                      | 5   |
| .605**               | .590**                      | 27 | .480**                  | .461**                      | 17 | .499**               | .438**                      | 6   |
| .514**               | .584**                      | 28 | .470**                  | .448**                      | 18 | .451**               | .651**                      | 7   |
| .571**               | .578**                      | 29 | .618**                  | .650**                      | 19 | .536**               | .542**                      | 8   |
| .509**               | .568**                      | 30 | .675**                  | .685**                      | 20 | .403**               | .590**                      | 9   |
| .688**               | .748**                      | 31 | .685**                  | .757**                      | 21 | .363**               | .330*                       | 10  |
| .899**               | Dimension–Scale Correlation |    | .949**                  | Dimension–Scale Correlation |    | .439**               | Dimension–Scale Correlation | 11  |
|                      |                             |    |                         |                             |    | .831**               |                             |     |

\*Statistically significant at the 0.05 level.

The data in Table (2) shows that the item correlation coefficients with the total score ranged from 0.248 to 0.763, while the item correlation coefficients with the dimension ranged from 0.330 to 0.824. The dimension correlation coefficients with the total score ranged from 0.831 to 0.949. The item acceptance criterion was that the item correlation coefficient with the dimension must be greater than 0.30.

### Third: Reliability of the Spiritual Intelligence Scale

To ensure the reliability of the Spiritual Intelligence Scale, the internal consistency coefficient was calculated using Cronbach's alpha for internal consistency. Table (3) shows the results

**Table 3.** Reliability coefficients of the spiritual intelligence scale and its dimensions

| Dimension                                                     | Stability Coefficient |
|---------------------------------------------------------------|-----------------------|
| Spiritual intelligence as a whole                             | 0.925                 |
| The ability to transcend                                      | 0.782                 |
| The ability to enter higher spiritual states of consciousness | 0.816                 |
| The ability to use spirituality to confront problems          | 0.878                 |

Table (3) shows that the reliability coefficients of the scale and its dimensions ranged between (0.782-0.925), which is higher than (0.60), indicating that the scale has good reliability.

### Internal Construct Validity

To verify the construct validity of the scale, the correlations of the item with the dimensions and the total score of the scale were extracted, as shown in Table.(4)

**Table 4.** Correlationship coefficient of the item with the dimensions and the total score of the quality of life scale

| Social support aspect                |                             |       | psychological and emotional aspect |                             |       |
|--------------------------------------|-----------------------------|-------|------------------------------------|-----------------------------|-------|
| Correlation by Scale                 | Correlation Dimension       | by NO | Correlation by Scale               | Correlation Dimension       | by NO |
| .708**                               | .790**                      | 9     | .664**                             | .806**                      | 1     |
| .778**                               | .852**                      | 10    | .684**                             | .780**                      | 2     |
| .823**                               | .823**                      | 11    | .566**                             | .701**                      | 3     |
| .802**                               | .856**                      | 12    | .797**                             | .817**                      | 4     |
| .910**                               | .956**                      | 13    | .735**                             | .715**                      | 5     |
| .813**                               | .845**                      | 14    | .798**                             | .864**                      | 6     |
| .859**                               | .885**                      | 15    | .672**                             | .756**                      | 7     |
|                                      |                             |       | .749**                             | .818**                      | 8     |
| .946**                               | Dimension–Scale Correlation |       | .907**                             | Dimension–Scale Correlation |       |
| Personal aspect and self-development |                             |       | Physical and health aspect         |                             |       |
| .856**                               | .887**                      | 23    | .771**                             | .844**                      | 16    |
| .885**                               | .899**                      | 24    | .834**                             | .891**                      | 17    |
| .880**                               | .899**                      | 25    | .892**                             | .936**                      | 18    |
| .774**                               | .858**                      | 26    | .838**                             | .878**                      | 19    |
| .876**                               | .910**                      | 27    | .889**                             | .876**                      | 20    |

|        |                             |    |        |                             |    |
|--------|-----------------------------|----|--------|-----------------------------|----|
| .840** | .877**                      | 28 | .913** | .906**                      | 21 |
| .841** | .864**                      | 29 | .823** | .855**                      | 22 |
| .724** | .801**                      | 30 |        |                             |    |
| .871** | .859**                      | 31 |        |                             |    |
| .814** | .876**                      | 32 |        |                             |    |
| .811** | .825**                      | 33 |        |                             |    |
| .961** | Dimension–Scale Correlation |    | .963** | Dimension–Scale Correlation |    |

\*Statistically significant at the 0.05 level.

It is noted from the data in Table (4) that the values of the item's correlation coefficients with the total score ranged between (0.566-0.913), while the values of the item's correlation coefficients with the dimension ranged between (0.701-0.956), while the values of the dimensions' correlation coefficients with the total score ranged between (0.907-0.963). The criterion for accepting an item was that the item's correlation coefficient with the dimension should be higher than (0.30).

### Reliability of the Quality of Life Scale:

To ensure the reliability of the Quality of Life Scale, the internal consistency coefficient of the scale was calculated using Cronbach's alpha equation for internal consistency, and Table (5) shows the results.

**Table 5.** Reliability coefficients of the Quality of Life Scale and its dimensions

| Dimension                                 | Stability Coefficient |
|-------------------------------------------|-----------------------|
| Overall quality of life                   | 0.981                 |
| Psychological and emotional well-being    | 0.907                 |
| Social support                            | 0.939                 |
| Physical and health-related aspects       | 0.953                 |
| Personal development and self-improvement | 0.967                 |

Table (5) shows that the reliability coefficients of the scale and its dimensions ranged between (0.907-0.981), which is higher than (0.60), indicating that the scale has good reliability.

### Scale Scoring

For the purpose of scoring the Quality of Life Scale, a five-point Likert scale was adopted, where the response is always (5 points), often (4 points), sometimes (3 points), rarely (2 points), and never (1 point). The level of quality of life was divided as follows:

- Low level(2.33-1.00)
- Moderate level(3.66-2.34)
- High level(5.00-3.67)

## STUDY RESULTS AND DISCUSSION

### Results of the first question: What is the level of spiritual intelligence among mothers of children with cancer in Jordan?

To answer this question, the means and standard deviations of the dimensions of the spiritual intelligence scale were calculated for mothers of children with cancer in Jordan. Table (6) shows the results:

**Table 6.** Arithmetic means and standard deviations of the level of spiritual intelligence among mothers of children with cancer

| NO                              | Dimensions                                                    | Rank | Arithmetic Mean | Standard Deviation | Level |
|---------------------------------|---------------------------------------------------------------|------|-----------------|--------------------|-------|
| 3                               | The ability to use spirituality to confront problems          | 1    | 4.26            | 0.601              | High  |
| 1                               | The ability to transcend                                      | 2    | 4.21            | 0.487              | High  |
| 2                               | The ability to enter higher spiritual states of consciousness | 3    | 4.18            | 0.572              | High  |
| Level of spiritual intelligence |                                                               |      | 4.22            | 0.493              | High  |

Table (6) shows that the level of spiritual intelligence among mothers of children with cancer in Jordan was high, as the arithmetic mean reached (4.22) with a standard deviation of (0.493). The arithmetic means for the dimensions of spiritual intelligence ranged between (4.18-4.26). The third dimension, "the ability to use

spirituality to confront problems,” came in first place with an arithmetic mean of (4.26), and the second dimension, “the ability to enter into high spiritual states of consciousness,” came in last place with an arithmetic mean of (4.18)

### Results of question two: What is the quality of life level for mothers of children with cancer in Jordan?

To answer this question, the arithmetic means and standard deviations of the dimensions of the quality of life scale for mothers of children with cancer in Jordan were calculated, and Table (7) shows the results:

**Table 7.** Arithmetic means and standard deviations of quality of life level among mothers of children with cancer

| NO                    | Dimensions                            | Rank | Arithmetic Mean | Standard Deviation | Level |
|-----------------------|---------------------------------------|------|-----------------|--------------------|-------|
| 4                     | Personal and self-development aspects | 1    | 4.17            | 0.841              | High  |
| 2                     | Social support aspects                | 2    | 4.02            | 0.883              | High  |
| 1                     | Psychological and emotional aspects   | 3    | 3.91            | 0.775              | High  |
| 3                     | Physical and health aspects           | 4    | 3.83            | 0.975              |       |
| Quality of life level |                                       |      | 4.00            | 0.817              | High  |

Table (7) shows that the quality of life level of mothers of children with cancer in Jordan was high, as the arithmetic mean reached (4.00) with a standard deviation of (0.817). The arithmetic means for the dimensions of quality of life ranged between (3.83-4.17). The fourth dimension, “Personal Aspect and Self-Development,” came in first place with an arithmetic mean of (4.17), and the third dimension, “Physical and Health Aspect,” came in last place with an arithmetic mean of (3.83)

### Results of the third question: Does the level of spiritual intelligence among mothers of children with cancer in Jordan differ according to (the child's gender, family income, educational qualification, and birth order of the child)?

To answer this question, the arithmetic means and standard deviations of the level of spiritual intelligence among mothers of children with cancer in Jordan were extracted, attributed to the child's gender, family income, educational qualification, and birth order of the child. Table (8) shows the results.

**Table 8.** Arithmetic means and standard deviations of the level of spiritual intelligence among mothers of children with cancer in Jordan, attributed to the child's gender, family income, educational qualification, and birth order of the child

| Variable                   | Variable Levels               | Arithmetic Mean | Standard Deviation |
|----------------------------|-------------------------------|-----------------|--------------------|
| Child's gender             | Male                          | 4.31            | 0.46               |
|                            | Female                        | 4.05            | 0.52               |
| Educational qualifications | Less than 500 dinars          | 4.22            | 0.52               |
|                            | More than 500 dinars          | 4.22            | 0.45               |
| Child's gender             | Less than a bachelor's degree | 4.27            | 0.48               |
|                            | Bachelor's degree or higher   | 4.17            | 0.51               |
| Educational qualifications | First                         | 4.23            | 0.42               |
|                            | Middle                        | 4.32            | 0.53               |
|                            | Last                          | 4.05            | 0.50               |

Table (8) shows apparent differences in the arithmetic means of the level of spiritual intelligence among mothers of children with cancer in Jordan, attributed to the child's gender, family income, educational qualification, and birth order of the child. To determine whether these apparent differences were statistically significant, a four-way ANOVA was used, and Table (9) shows the results.

**Table 9.** Four-Way ANOVA of Differences in Spiritual Intelligence Levels Among Mothers of Children with Cancer in Jordan Attributable to Child's Gender, Family Income, Educational Qualification, and Birth Order

| Source of Variance         | Sum of Squares (SS) | Degrees of Freedom (df) | Mean Square (MS) | F-value | Significance Level (p-value) | Effect Size |
|----------------------------|---------------------|-------------------------|------------------|---------|------------------------------|-------------|
| Child's gender             | .757                | 1                       | .757             | 3.269   | .077                         | .061        |
| Family income              | .001                | 1                       | .001             | .003    | .957                         | .000        |
| Educational qualifications | .210                | 1                       | .210             | .908    | .345                         | .018        |

|                     |        |    |      |       |      |      |
|---------------------|--------|----|------|-------|------|------|
| Child's birth order | .863   | 2  | .431 | 1.862 | .166 | .069 |
| Error               | 11.585 | 50 | .232 |       |      |      |
| Total               | 13.387 | 55 |      |       |      |      |

Table (9) shows that there are no statistically significant differences at the ( $\alpha=0.05$ ) level in the level of spiritual intelligence among mothers of children with cancer in Jordan attributable to the child's gender, family income, educational qualification, and birth order of the child, as the F-values were not statistically significant at the (0.05) significance level.

#### Results of Question 4: Does the quality of life of mothers of children with cancer in Jordan differ according to (the child's gender, family income, educational attainment, and birth order)?

To answer this question, the means and standard deviations of the quality of life of mothers of children with cancer in Jordan were calculated based on the child's gender, family income, educational attainment, and birth order. Table (10) shows the results.

**Table 10.** Arithmetic means and standard deviations of quality of life level among mothers of children with cancer in Jordan, attributed to the child's gender, family income, educational qualification, and birth order of the child

| Variable                   | Variable Levels               | Arithmetic Mean | Standard Deviation |
|----------------------------|-------------------------------|-----------------|--------------------|
| Child's gender             | Male                          | 4.10            | 0.76               |
|                            | Female                        | 3.83            | 0.91               |
| Family income              | Less than 500 dinars          | 3.97            | 0.93               |
|                            | More than 500 dinars          | 4.07            | 0.57               |
| Educational qualifications | Less than a bachelor's degree | 3.99            | 0.82               |
|                            | Bachelor's degree or higher   | 4.01            | 0.83               |
| Child's birth order        | First                         | 3.85            | 0.79               |
|                            | Middle                        | 4.26            | 0.65               |
|                            | Last                          | 3.80            | 0.99               |

Table (10) shows apparent differences in the arithmetic means of the quality of life level among mothers of children with cancer in Jordan, attributed to the child's gender, family income, educational qualification, and birth order of the child. To determine whether these apparent differences were statistically significant, a four-way ANOVA was used, and Table (11) shows the results.

**Table 11.** Four-Way ANOVA for differences in quality of life among mothers of children with cancer in Jordan attributable to the child's gender, family income, educational qualification, and birth order of the child

| Source of Variance         | Sum of Squares (SS) | Degrees of Freedom (df) | Mean Square (MS) | F-value | Significance Level (p-value) | Effect Size |
|----------------------------|---------------------|-------------------------|------------------|---------|------------------------------|-------------|
| Child's gender             | 1.079               | 1                       | 1.079            | 1.643   | .206                         | .032        |
| Family income              | .152                | 1                       | .152             | .231    | .633                         | .005        |
| Educational qualifications | .008                | 1                       | .008             | .012    | .912                         | .000        |
| Child's birth order        | 2.717               | 2                       | 1.359            | 2.069   | .137                         | .076        |
| Error                      | 32.832              | 50                      | .657             |         |                              |             |
| Total                      | 36.670              | 55                      |                  |         |                              |             |

Table (11) shows that there are no statistically significant differences at the ( $\alpha=0.05$ ) level in the quality of life of mothers of children with cancer in Jordan attributable to the child's gender, family income, educational qualification and birth order of the child, as the F-values were not statistically significant at the (0.05) significance level.

#### Results of Question 5: Is there a statistically significant correlation ( $\alpha \leq 0.05$ ) between spiritual intelligence and quality of life among mothers of children with cancer?

To answer this question, Pearson correlation coefficients were calculated between the level of spiritual intelligence and quality of life among mothers of children with cancer. Table 12 shows the results.

**Table 12.** Pearson correlation coefficient values between spiritual intelligence and quality of life among mothers of children with cancer

| Points of Comparison | Quality of Life |
|----------------------|-----------------|
|----------------------|-----------------|

|                                                               | Overall quality of life | Psychological and emotional well-being | Social support | Physical and health-related aspects | Personal development and self-improvement |
|---------------------------------------------------------------|-------------------------|----------------------------------------|----------------|-------------------------------------|-------------------------------------------|
| Spiritual intelligence as a whole                             | .752**                  | .719**                                 | .663**         | .720**                              | .735**                                    |
| The ability to transcend                                      | .590**                  | .552**                                 | .515**         | .602**                              | .560**                                    |
| The ability to enter higher spiritual states of consciousness | .734**                  | .684**                                 | .650**         | .706**                              | .724**                                    |
| The ability to use spirituality to confront problems          | .689**                  | .683**                                 | .608**         | .623**                              | .680**                                    |

**\*\* Statistically significant at the 0.01 level**

**\* Statistically significant at the 0.05 level**

## DISCUSSION OF RESULTS

### First: Discussion of the results of the first question: What is the level of spiritual intelligence among mothers of children with cancer in Jordan?

The results indicated that the level of spiritual intelligence among mothers of children with cancer was high. The researchers attribute this to the level of awareness that mothers have reached in the present time, especially with the technological revolution and the ease of communication and access to information more quickly. It may also be due to the unique situation these mothers experience, related to the nature of cancer patients. This may bring them closer to God, leading them to turn to Him more often, which contributes to their sense of comfort and stability, their belief in divine decree and destiny, and their greater ability to understand the reality of the situation of children with cancer. Consequently, this contributes to their possessing high levels of spiritual intelligence.

The results of the current study differed from the study by Rezavandi et al. (2018), which indicated that the level of spiritual intelligence among mothers of children with cancer was average.

### Second: Discussion of the results of the second question: What is the quality of life of mothers of children with cancer in Jordan?

The results of the second question indicate a high quality of life for mothers of children with cancer. The researchers attribute this to the mothers' awareness of the importance of providing a supportive family environment for their children to help them overcome the effects of this disease, especially since many studies and research have confirmed that a high quality of life contributes to overcoming stress. Furthermore, the availability of social support, which is characteristic of Jordanian society and its strong family bonds, contributes to mothers of children with cancer achieving high levels of quality of life. This was confirmed by Toledano-Tolendano et al. (2020) when they discussed the role of social support in increasing quality of life. Another reason is that the current technological revolution has enabled mothers to connect with others who share the same situation—that is, those who have children with cancer—thus providing opportunities to exchange experiences and learn, which can lead to a better quality of life for mothers. The results of the current study differed from the study by Salimi et al. (2017), which indicated a decrease in the quality of life of mothers of children with cancer, as well as from the study by Rezaei et al. (2018).

### Third: Discussion of the results of question three: Does the spiritual intelligence of mothers of children with cancer in Jordan differ according to (the child's gender, family income, educational qualification, and birth order)?

The results of question three indicated no statistically significant differences in the level of spiritual intelligence among mothers of children with cancer in Jordan attributable to the child's gender, family income, educational qualification, or birth order. The lack of differences attributable to the child's gender can be explained by the fact that the psychological and physical effects of cancer are the same regardless of the child's gender, and the mother's psychological and physical suffering as a result of her child's cancer diagnosis is the same regardless of gender.

Regarding family income, the spiritual intelligence of a mother with a child with cancer is not necessarily linked to family income; a low-income family may still possess high spiritual intelligence. As for educational qualification, no differences were found among mothers of cancer patients in this variable. This may be because spirituality is inherent in human beings regardless of their educational qualifications and is not contingent upon

obtaining a high degree. Regarding the birth order of a child with cancer, the child is the same child suffering the physical and psychological consequences of the disease, and for the mother, they are a son or daughter regardless of whether they are first, middle, or last born.

The study's findings are consistent with those of Al-Saliti et al. (2025), which indicated no differences in spiritual intelligence levels attributable to the mother's educational level (diploma, bachelor's, postgraduate), socioeconomic status (low, medium, high), or the type of disability the child has.

#### **Fourth: Discussion of the results of question four: Does the quality of life of mothers of children with cancer in Jordan differ according to (the child's gender, family income, educational level, and birth order)?**

The results of question four indicated no statistically significant differences in the level of quality of life of mothers of children with cancer in Jordan attributable to the child's gender, family income, educational level, or birth order.

The lack of differences in the level of quality of life of mothers of children with cancer based on the child's gender can be explained by the fact that mothers who enjoy a high quality of life are able to cope with their child regardless of gender, and their quality of life is not linked to the child's gender, but rather they act based on their own existing quality of life.

As for family income, this may be attributed to the mothers' level of awareness and culture of self-care despite existing pressures. Furthermore, a mother's attention to her own well-being and mental health contributes to her child with cancer living a better life with less pain and negative effects. She may also provide a model for overcoming adversity and hardship through her patience, care for him and herself, and her determination to ensure a better life for her family.

Regarding educational qualifications, this can be explained by the fact that mothers, regardless of their educational background, can enjoy a high quality of life. This is directly related to the mother's level of awareness, knowledge, and education about the nature of her child's illness and how to cope with difficult circumstances. This contributes to a high quality of life regardless of educational qualifications. Furthermore, the experiences a mother of a child with cancer may have when she interacts with other mothers of children with cancer can also contribute to a high quality of life, regardless of educational qualifications. Life experiences, social factors, and family support are all present, regardless of educational attainment.

As for the birth order variable, the quality of life for mothers with high quality of life remains the same whether their child with cancer is the first, middle, or last. The psychological and physical effects of cancer on both the child and the mother are the same and do not differ based on the child's birth order. The study's findings differed from those of Rezaei et al. (2018), which indicated differences in both monthly income and maternal education level, showing that mothers with higher education and higher monthly income enjoyed a higher quality of life.

The results also differed from those of Toledano-Tolendano et al. (2020), which suggested that higher monthly income and higher education levels were stronger predictors of quality of life. Similarly, they differed from those of Vierira et al. (2022), which confirmed that both education level and monthly income influence quality of life.

#### **Fifth: Discussion of the results of question five: Is there a statistically significant correlation at the ( $\alpha \leq 0.05$ ) level between spiritual intelligence and quality of life among mothers of children with cancer?**

The results of question five indicate a positive correlation between quality of life and spiritual intelligence among mothers of children with cancer. The researchers attribute this to the fact that individuals with a high quality of life are more likely to possess high levels of spiritual intelligence. Quality of life encompasses positive feelings such as contentment and happiness, as well as the individual's ability to satisfy their basic needs through a supportive environment and the provision of services in the health, social, educational, and psychological fields (Abu Ghazaleh, 2016). All of this supports the individual's capacity to possess high spiritual intelligence, a point confirmed by Ahoei et al. (2017), who identified numerous factors that enhance spiritual intelligence, including cultural and social factors, family cohesion, and feelings of happiness and contentment.

The results of the current study are consistent with the study by Farshad et al. (2020), which indicated a positive relationship between quality of life and spiritual intelligence.

## RECOMMENDATIONS

1. Strengthen guidance programs for mothers and ensure that health institutions and specialized centers provide guidance and awareness programs aimed at raising mothers' spiritual intelligence, given its role in improving their psychological and social adaptation to their children's illness.
2. Activate social support and direct decision-makers in the Ministry of Health and charitable organizations to increase social and psychological support networks for mothers through specialized support groups and community activities that help improve their quality of life.
3. Integrate the spiritual aspect into healthcare and ensure that the spiritual and religious aspects are incorporated as part of psychological and social care programs in hospitals and cancer treatment centers, through the presence of religious counselors or specialists in spiritual support.
4. Develop training programs for mothers and design training courses for mothers that focus on stress management skills, coping strategies, and self-care, contributing to improving their quality of life.
5. Conduct further surveys and experimental studies on mothers of children with cancer, taking into account variables other than those included in this study.
6. To benefit from the experiences and expertise of the mothers identified in the current study, and to provide an opportunity to exchange these experiences with mothers of other children suffering from intractable or chronic diseases.

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