

Investigating the relationship between the quality of life and religious coping in mothers of children with recurrence leukemia

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ABSTRACT

Background: Leukemia is a life-threatening chronic disease for children. The recurrence of the disease causes tension and reduces the quality of life for the family, especially for mothers. Religion is an important humanitarian aspect of holistic care that can be very effective in determining the health level of the patient and the family members. The present study aims at investigating the role of religious coping (RCOPE) in the quality of life for mothers of children with recurrent leukemia. **Methods:** This is a cross-sectional study of the descriptive-correlational type. Two-hundred mothers with children aging 1–15 years suffering from leukemia were selected using a continuous sampling method. The data were collected using questionnaires eliciting information about personal information, Persian version of the Caregiver Quality of Life Index-Cancer, and RCOPE. The collected data were analyzed in SPSS using descriptive tests and independent samples *t*-test. **Results:** The result of examining the relation between life quality and demographic features of mothers showed that education level, income, and occupation had a significant statistical relationship with general quality of life mothers. The results of examining the relationship between quality of life and RCOPE of mothers showed that RCOPE was positively correlated only with the positive coping dimension quality of life ($P < 0/001$). Negative RCOPE had a significant reverse statistical correlation with general quality of life and all its aspects. **Conclusion:** The quality of life for the participants in this study was significantly related to RCOPE. Mothers with negative RCOPE faced low scores for quality of life, and religious support can improve their life quality. Further longitudinal studies are required to investigate the effects of establishing support communities.

Keywords: Negative religious coping, positive religious coping, quality of life, recurrence leukemia

Introduction

Cancer is one of the most serious diseases of childhood which is both highly prevalent and has a great effect on the lives of the suffering children and their families.^[1] Based on the statistics released by The World Health Organization, 100 children in every one million children suffer from cancer. In a study conducted by Mousavi *et al.*, leukemia was reported to be the

most common type of cancer in children aging 0–14 years in Iran, and its frequency was estimated to be 8–62 cases in every one million children in 2004 in different parts of the country. Although cancer is a rare disease among children under the age of 15 in comparison with adults, it deserves special attention and investigation because of its seriousness.^[2] Recent breakthroughs in treating leukemia using chemotherapy or combined therapies have increased recovery rate from 97% to 99%, and long-term survival has reached 80%. Despite the high rate of recovery, recurrence is possible in 20% of cases.^[3] Cancer recurrence is

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defined as the recurring of the disease after a period of recovery.^[4] Treating patients with recurring cancer is much more difficult than patients without relapse of the disease, and survival rate for patients with recurring cancer is significantly lower in comparison with the other group.^[5]

Cancer has a serious effect not only on patients but also on people who take care of them.^[6] Families of the patients, as the most important and most readily available source of support and providing care, experience a lot of tension and stress, which can leave harmful effects on the quality of their lives.^[7,8] In children with recurring cancer, these harmful effects are more severe and leave more serious effects on their quality of life.^[9] Recurrence is an unpleasant experience for the family and survivors of the patients because they have to face the psychological-social effects of cancer including uncertainty, helplessness, and worries about death, again.^[10] Diagnosing cancer recurrence requires reorganizing the family to deal with their fear and their situation regarding starting a new treatment protocol.^[10,11]

As the caregivers are trying to overcome the difficulties of the treatment, they are threatened by treatment risks and uncertainty about prognosis and the possibility of death regarding the recurrence of the disease. It seems that not being able to have plans for their future creates a feeling of failure in them.^[12] When the caregivers fail to stop the suffering of the child and the development of the disease, a lack of a sense of control is felt, and they experience a sense of shame due to the gap between their wants and desires on the one hand and the reality on the other hand.^[13] The psychological effects on the family members become more prominent when the recurrence is diagnosed and they have to decide overtreatment. The role of the health team as a mediator in providing support becomes more vital in dealing with such critical situations.^[10,14]

Studies have shown that caregivers of patients suffering from cancer experience high levels of stress, depression, tiredness, hopelessness, fear, guilt, sleep disorders, and social isolation.^[15,16] In the case of children with blood cancer, their mothers have been reported to have lower levels of mental health and higher levels of depression and stress than their fathers.^[17] Furthermore, the quality of life for parents of children suffering from cancer has been reported to be low in comparison with other people.^[18,19]

Quality of life is a multidimensional construct, which includes physical, emotional, and social welfare aspects of people's life.^[20] Since quality of life is a multidimensional concept, some researchers include spirituality and religion in their study of life together with the other aspects mentioned earlier.^[21] The spiritual aspect is explained and interpreted as the need for meaning, goal, integrity of life, hope, beliefs, and fate. Therefore, this spiritual aspect is of great importance in achieving a sense of integrity and in the quality of life. Spirituality-religion is an effective factor in increasing people's capacity to accept, improving people's quality of life, and decreasing hopelessness in dying patients.^[22] Religion, as an important aspect of humanity in holistic care, improves

health and creates a sense of fitness. Since religious beliefs are so important in the health of the patients and their family members and in self-care behaviors, raising awareness and knowledge of religious beliefs is of great importance.^[23]

Religious coping (RCOPE) is an important strategy for dealing with stressful situations.^[24] The concept of RCOPE refers to using cognitive behavioral techniques that help a person cope with difficult and stressful situations in life,^[25] which is a multidimensional concept and can leave both positive and negative effects.^[26] Therefore, not all RCOPE techniques are useful and not all of them result in adjustment. It is conceived that positive RCOPE is accompanied by the benefits of psychological adjustment such as "solving personal problems with assistance from god," while negative RCOPE results in worse consequences and is considered "believing in a punisher god."^[27]

In several studies, RCOPE has consistently been shown to leave positive effects on the life quality of many patients suffering from chronic diseases such as breast cancer,^[28] chronic pain,^[29] cancer,^[30] the human immunodeficiency virus,^[31,32] end-stage renal disease,^[33,34] and epilepsy.^[35] Furthermore, Zamanian *et al.* investigated 101 patients suffering from cancer and found out that religion and spirituality were positively related to quality of life and mental health.^[36] Furthermore, religion has been reported to be related to the coping behavior of mothers of children suffering from cancer, and religion has been considered as a defensive-protective system for adjusting to the crises caused by cancer.^[37] In Iran, a relationship between life quality and negative RCOPE has been reported for the main caregiver in the family of children with physical disability.^[38]

Based on what has been said so far, the quality of life can be related to religion. Despite the fact that, religion is considered to be an important source of adjustment for caregivers, and some studies have been done on caregivers of children with cancer; no study so far has investigated the relationship between life quality and RCOPE in caregivers of children with recurrent leukemia in Islamic countries like Iran. This study was conducted to investigate the relationship between life quality and RCOPE in the mothers of children with recurrent leukemia.

Methods

The present study is a cross-sectional one of the descriptive-correlational type which was conducted from January 2016 to March 2017 in selected hospitals affiliated with the universities of medical sciences in Tehran (Hazrat-e Ali Asghar Hospital, The Children's Medical Center, Mofid Hospital, and Mahak Hospital). The population of the study included all the mothers of children aging 1–15 years with leukemia who had experienced the recurrence of the disease at least one time and who visited the blood clinics of the above-mentioned hospitals. Two hundred qualified mothers entered the study by assuming a correlation coefficient of 0.20 between life quality and RCOPE in mothers of children with leukemia who had experienced the

recurrence of the disease at least one time, a confidence interval of 95%, and a test power of 80%. The sampling method was continuous in a way that the researcher visited the clinics of the hospitals mentioned above on different days of the week and selected the qualified mothers to enter the study as the research unit. The criteria for mothers to enter the study were: being able to read and write in Farsi and having a child aging 1–15 years suffering from leukemia with at least one experience of the recurrence of the disease, as confirmed by the Physician and stated by the mother. Mothers with psychological and neurological disorders or other identified chronic diseases were excluded from the study.

Questionnaires about demographic information, Persian version of the Caregiver Quality of Life Index-Cancer (CQOLC-P), and RCOPE were used to gather the data. The demographic information questionnaire included items on age, education level, number of children, income level, and the occupation for the mother, and also age, sex, the time when the disease started, the time when the disease first recurred, the number of recurrences, and the types of treatments received for the child. The CQOLC questionnaire was developed by Weitzner *et al.* in 1997 in the United States, and the Cronbach's alpha for it was calculated to be 0.91 in a study conducted by Weitzner in 1999.^[39,40] This questionnaire was translated into Farsi by Khanjari *et al.*, and it was validated based on a construct and content validity method. The Cronbach's alpha for the questionnaire was calculated to be 0.89 in Iran. The CQOLC-P questionnaire includes 35 items. It consists of 4 areas, each area containing a number of items. Fourteen items are in the area of mental and physical suffering, nine items about the breakdown of lifestyle, eight items about positive coping, three items about economic worries, and one item about willingness to cooperate in taking care of a family member with cancer. This last item was not categorized in any of the other four areas, and the score for this item was included in the calculation of the total score.^[41] The items were responded to in a 5-point Likert scale. The points ranged from 0 to 4: strongly disagree (0), disagree (1), neither agree nor disagree (2), agree (3), and strongly agree (4). The highest possible score was 140, and a high score indicates a quality of life.^[39]

The RCOPE questionnaire^[3] includes 14 questions, consisting of two dimensions of positive RCOPE (7 questions) and negative RCOPE (7 questions), which was developed by Pargament *et al.*^[42] The reliability and validity of this questionnaire in Iran were assessed by Rouhani *et al.*, and the Cronbach's alpha coefficient was reported to be 0.86 for the positive coping dimension and 0.87 for the negative coping dimension.^[43]

To observe ethical considerations, after getting the required licenses from the research committee of the university, an informed written consent was obtained from all the mothers who participated in the study, and they were assured that the information about them would be kept confidential, and they were informed that they could withdraw from the study at any time they wanted to. This study is recorded in the ethics

committee of Iran University of Medical Sciences under the ethics code IR.IUMS.REC.1394.9211196240.

The data were analyzed in SPSS version 16 (SPSS, Chicago, IL, USA) using descriptive statistics, independent samples *t*-test, one-way analysis of variance, correlation coefficient, and multiple regression, and $P < 0.05$ was considered to be significant.

Results

The demographic information for the mothers and children investigated in the study

The mean age of the investigated mothers was 34.38 ± 5.65 years (the youngest 22 and the oldest 55 years), and the mean age of the children with leukemia was 6.65 ± 3.82 years (the minimum age was 1 and the maximum age was 15). Of all the 200 children, 125 children were boys (62.5%) and 75 children were girls (37.5%). The average length of having leukemia for the children was 4.60 ± 3.39 years. One hundred and seventy-nine of the children (89.5%) had experienced at least one recurrence of the disease [Table 1].

The mean scores for quality of life and religious coping

The mean score for the total life quality score for mothers of children with recurrent leukemia was 61.25 ± 14.98 , and the score for all aspects of life quality, which included the areas of mental and physical suffering, the breakdown of lifestyle, and economic worries, was less than half of the highest possible score, except for the area of positive coping (20.85 ± 4.05) [Table 2]. The results of the study also showed that the score for the area of the positive RCOPE of the investigated mothers (21.87) was more than half of the highest possible score [Table 2].

Relationship between quality of life and demographic information of the investigated mothers and children

The results of the study on the relationship between quality of life and demographic information of mothers showed that the education level ($P < 0.05$), income ($P < 0.001$), and occupation ($P < 0.001$) had a significant relationship with the general quality of life of mothers. However, there was no statistically significant relationship between the quality of life score and other demographic information. Parallel comparison showed that quality of life in mothers with university education was significantly higher than other mothers in the study. Furthermore, quality of life in mothers with an adequate income was higher than other mothers. Housewives had lower quality of life than employees.

The relationship between quality of life and religious coping

The results of the study on the relationship between quality of life and RCOPE in mothers of children with leukemia showed that RCOPE was positively correlated only with the positive coping dimension quality of life ($P < 0.001$), and negative RCOPE had

Table 1: Frequency distribution of the demographic variables of the study sample (n=200)

Demographic variables	Frequency (%)
Personal information of the mother	
Age (year)	
Under 30	44 (22)
30-39	124 (62)
40 and over	32 (16)
Marital status	
Married	192 (96)
Divorced, widowed	8 (4)
Educational status	
Illiterate	8 (4)
Primary	51 (25.5)
Secondary	97 (48.5)
University	44 (22)
Number of children	
One	58 (29)
Two	95 (47.5)
Three or more	47 (23.5)
Income level	
Good	26 (13)
Intermediate	93 (43.5)
Poor	81 (40.5)
Employment status	
Unemployed/housewife	181 (90.5)
Employed	19 (9.5)
Personal information of the child	
Age (year)	
Under 5	73 (36.5)
5-9	80 (40)
10 and over	47 (23.5)
Gender	
Male	125 (62.5)
Female	75 (37.5)
Starting age of illness	
Under 4	97 (48.5)
4-7	68 (34)
8 and over	35 (17.5)
Time of first relapse	
Under 4	68 (34)
7-8	80 (40)
8 and over	52 (26)
Count of relapse	
Once	179 (89.5)
More than once	21 (10.5)
Treatment registered	
Radiotherapy	
Yes	32 (16)
No	168 (84)
Other treatments	
Yes	11 (5.5)
No	189 (94.5)

significant reverse correlation with overall quality of life and all its aspects [Table 3].

The results of the linear regression showed that there was a significant relationship between the variables in the regression,

income, and occupation and negative RCOPE with the quality of life of mothers. Housewives had lower quality of life than employees ($B = 7/73$). Furthermore, mothers with an adequate income level ($B = 13.94$) had quality of life higher than those who said they did not have enough income. The results also showed that by increasing the unit of quality of life, the negative RCOPE would be reduced as much as $1/536$ [Table 4].

Discussion

The results of this study showed that the mean score for the general quality of life for mothers of children with recurrent leukemia was less than half of the total score, indicating that they do not live a very satisfactory life. The quality of life for the mothers investigated in this study was low in comparison with the quality of life reported for caregivers (father, mother, brother, sister, and children) in a family in other studies conducted in Iran, Turkey, and Taiwan.^[44-46] The results also showed that the quality of life for mothers of children with recurrent leukemia was lower than mothers of children with leukemia.^[19] One reason for this might be that taking care of a child with recurrent leukemia is extremely exhausting, and the hope of recovering from the disease decreases.

Diagnosing the recurrence of the disease requires that the family be reorganized to be able to deal with their fear and their situation regarding starting a new treatment protocol.^[10,11] Recurrence of the disease in children is an unpleasant experience for their families because the family, especially the mother, has to face the psychological-social effects of cancer such as uncertainty, hopelessness, and worrying about the death of the child, again.^[10]

The investigation of different dimensions of quality of life in this study showed that economic worries and then mental and physical suffering scored the lowest. This finding can be an indicator of serious economic worries on the part of caregiver mothers and also of high levels of their suffering, which is more severe for mothers of children with recurrent leukemia than mothers of children without recurrent leukemia.^[47] This finding demonstrates the importance of full psychological and social support for these mother so that they can take care of their children in a better way.

The results also showed that the quality of life for employed mothers with adequate income was higher than the other mothers, a fact related to decreased economic worries, which is an important aspect quality of life, and a strong predictor of a higher quality of life. A study in Taiwan reported a positive relationship between higher family income and a higher quality of life for parents of children suffering from cancer.^[48] In a study in Iran, a significant relationship was reported between quality of life and the parents' income and their occupational status.^[19] Furthermore, in a study by Tang titled "the quality of life for the caregiver member of families with children suffering from cancer in Taiwan," the quality of life for caregiver mothers was significantly related to their level of university education.^[46]

However, a study by Litzelman on the quality of life for parents of children suffering from leukemia and brain tumors showed that higher levels of education in parents were accompanied by lower levels of life quality because parents with higher levels of education prefer to actively participate in the process of making decisions about the treatment of their children, and this increases their stress, which leaves a negative effect on their quality of life.^[49]

The correlation between the scores for quality of life and negative RCOPE showed that mothers of children with recurrent leukemia deal with tensions and stresses by negative religious behaviors. This negative RCOPE can be related to their lower quality of life, and the results of the linear regression showed that negative coping can be a predictor of life quality of mothers of children with recurrent leukemia. The results of our study are in line with the results found in Ljungman *et al.* on mothers of children with cancer.^[37] The results from Vallurupalli *et al.* on patients suffering from advanced cancer^[50] and Tarakeshwar *et al.* on patients suffering from advanced cancer^[51] showed that using more negative RCOPE results in lowered life quality.

The results of this study showed a correlation between the scores of quality of life and positive RCOPE indicating that positive RCOPE is associated with increased quality of life only in terms of positive coping dimension. In positive RCOPE, the person deals with negative incidences of his or her life (like having a child with cancer) through positive changes attributed to help from God and tries to follow a purposeful life with the help from God and improve his or her relationship with God through religious institutions.^[52] Furthermore, Ljungman (2014) study showed a very strong relationship between religion and coping behavior of mothers of children with cancer, and religion is considered to be a defensive-protective system for coping with the crises associated with having cancer.^[37] In another study, the researchers arrived at the conclusion that spirituality increases the capacity for acceptance and decreases hopelessness in patients.^[22] However, the results of a study by Ursaru *et al.* (2014) on patients suffering from breast cancer showed that using RCOPE mechanisms was not correlated with quality of life.^[53] The discrepancies between these results and the results of the present study can be attributed to cultural differences and also the cases investigated in the studies; the above-mentioned study was conducted on patients suffering from cancer themselves, but the present study was conducted on the mothers of patients with cancer.

The results of this study demonstrated the importance of the effects of RCOPE on the quality of life for mothers of children with recurrent leukemia. Positive RCOPE is a predictor of a higher life quality, and negative RCOPE is a predictor of a lower quality of life. In this study, negative RCOPE was a stronger predictor of quality of life than positive RCOPE.

One of the major limitations of this study was the high levels of distress experienced by the parents, which could have affected their responses to the questions. Another limitation is the cross-sectional nature of the study. Given that the investigated sample in this study consisted of mothers of children with

Table 2: Means and standard deviations of quality of life and religious coping of the study sample (n=200)

Variable	Mean±SD	Possible score range
CGQOL-P scores (0-140) ^a		
Mental and emotional burden	17.5±7.65	0-56
Lifestyle disruption	15.6±6.04	0-36
Positive adaptation	20.9±4.05	0-32
Financial concerns	3.9±3.19	0-12
Overall quality of life	61.3±14.98	0-140
RCOPE (positive) ^a	21.9±4.03	7-28
RCOPE (negative) ^a	13.7±4.57	7-28

^aHigher scores indicate higher QoL-positive and QoL-negative RCOPE. CQOLC-P: Persian version of the Caregiver Quality of Life Index-Cancer; RCOPE: Religious Coping; QoL: Quality of life; SD: Standard deviation

Table 3: The correlation among quality of life and religious coping

	Mental and emotional burden	Lifestyle disruption	Positive adaptation	Financial concerns	Overall QoL	RCOPE (positive)
RCOPE (positive)	-0.055	0.052 ^a	0.357 ^b	0.075	0.112	-
RCOPE (negative)	-0.418 ^b	-0.381 ^b	-0.167 ^b	-0.251 ^b	-0.478 ^b	-0.121 ^c

^aThe coefficients of correlation, r, is given (n=115); ^bCorrelation is significant at the 0.01 level (two-tailed); ^cCorrelation is significant at the 0.05 level (two-tailed). RCOPE: Religious Coping; QoL: Quality of life

Table 4: Final result of the regression analysis in family caregivers of patients with cancer (n=200)

Dependent variable	Independent	Variables	B	Standardized coefficients	t	Significant	R ²	
CQOLC-P	Education	Higher than diploma		Reference		Category		
		Diploma	-1.327	-0.044	-0.515	0.607		
		Lower than diploma	-2.419	-0.074	-0.836	0.404		
	Income	Not enough			Reference		Category	
		Quite enough	2.182	0.073	1.155	0.249	0.391	
		Enough	13.940	0.314	4.545	0.000		
	Employment status	Employed			Reference		Category	
		Homemaker	-7.730	-0.152	-2.345	0.020		
		RCOPE (negative)		-1.536	-0.469	-8.201	0.000	

CQOLC-P: Persian version of the Caregiver Quality of Life Index-Cancer; B: Unstandardized coefficients; RCOPE: Religious Coping

leukemia, the possibility of generalizing the results to fathers is limited. Therefore, it is suggested that the relationship between quality of life and RCOPE in fathers of children with leukemia should be investigated too.

Conclusion

The results showed that quality of life mothers of children with recurrent leukemia was significantly related to RCOPE, in a way that mothers with negative RCOPE were exposed to the risk of having a less-than-average quality of life. Religious support can help improve their quality of life. It is essential for doctors and nurses to take religious considerations into account as one of the most important aspects of treatment and care for improving the quality of life caregivers of patients with leukemia. More longitudinal studies are needed to investigate the effects of establishing support communities.

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Conflicts of interest

There are no conflicts of interest.

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