

Original Article

Quality of life, religious attitude and cancer coping in a sample of Iranian patients with cancer

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Abstract

BACKGROUND: Cancer is one of the leading causes of mortality and morbidity worldwide. The incidence of cancer has increased markedly in recent decades in most countries. Studies have shown that diseases such as cancer affect the individuals' quality of life.

METHODS: The sample of study consisted of 384 patients selected through non-random convenient sampling procedure from three general hospitals and outpatient clinics in Isfahan and Tehran. The measures used in the study included a demographic questionnaire, the Iranian version of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30), the Cancer Coping Questionnaire, and the Religious Attitude Questionnaire.

RESULTS: The results revealed significant correlation between patients' scores on the total scale of the Cancer Coping Questionnaire and their scores on the Global health status/Quality of Life. Significant correlations were also found between patients' scores on the Religious Attitude Questionnaire and various scales of the Quality of Life Questionnaire. However, no significant correlations were found between Cancer Coping and Religious Attitude measures in any type of cancer except for the prostate cancer.

CONCLUSIONS: Religious attitude was a significant and important factor in coping with cancer. In addition, patients' quality of life correlated significantly with religious attitude as well as cancer coping measures. However, the results did not show any significant relationship between religious attitude and cancer coping measures except in patients with prostate cancer. The findings of this study are consistent with other studies that have shown significant correlations between religiosity and spirituality and quality of life in patients with life threatening diseases.

KEYWORDS: Cancer, Coping, Quality of Life, Religion, Attitude.

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Cancer is one of the leading causes of mortality and morbidity worldwide. The incidence of cancer has increased markedly in recent decades in most countries.

However, there have been only limited attempts to control these costs by implementing primary prevention programs. The cost of cancer care has substantially increased over the

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years. Aside from the direct cost of patient care,¹ millions of dollars are spent each year on finding more effective treatment methods. In addition, billions of dollars are lost due to work related problems. Patients with cancer experience symptoms and signs including pains and various physical and mental distresses. Immediately after being diagnosed with cancer, the patients may experience anxiety and mood disturbances, which may fluctuate over time in response to treatment procedures, remission, and recurrence of the symptoms.²

Researchers have studied the role and importance of the quality of life in various medical conditions, such as cancer,³⁻¹⁸ multiple sclerosis,¹⁹⁻²¹ Parkinson's diseases,²² post organ transplantation,²³⁻²⁴ serious injuries,²⁵ kidney diseases,²⁶⁻²⁹ inflammatory bowel disease,³⁰ advanced heart failure,³¹ systemic lupus erythematosus,³²⁻³³ strokes,³⁴ dementia³⁵ and chronic obstructive pulmonary disease.³⁶ Despite medical advances in the treatment of cancer which has resulted in better patient care, increased life expectancy, and improved quality of life; however, almost all of the patients experience hopelessness and helplessness. Cancer causes extreme fear in patients.³⁷

Undoubtedly, diagnosis of a life threatening disease such as cancer can affect patients' quality of life. Cancer is not just an event with certain end, but due its nature, treatment outcome, and related psychological issues, it is an ambiguous and continuing condition characterized by delayed and at times unpredictable consequences.³⁸

For many patients who face life-threatening diseases, religion and religious coping are among the most important determinant factors of their quality of life. Strategies that patients use to cope with challenging diseases can be an important predictor of their quality of life. Religious/spiritual resources may be particularly relevant when dealing with life threatening situations.³⁹ A number of studies have found the religion to be a major source of support and hope for patients in coping with such diseases.⁴⁰⁻⁴²

In numerous studies, the majority of participants with different types of cancer have reported, often spontaneously, religiousness to be an important source of support in dealing with their illness.⁴³ Sherman and Simonton⁴³ found that religious activities usually rank among the most frequent coping responses reported by cancer patients. Religious resources may also play a significant role in long-term adjustment to cancer, such as relieving stress, retaining a sense of control, maintaining self-esteem, providing emotional comfort and hope, as well as a sense of meaning and purpose in life.³⁹

The locus of control concept developed by Rotter,⁴⁴ refers to the individuals' belief regarding the control they have over their lives. Control orientation, which describes the extent to which one's actions are instrumental to goal attainment, was first measured in Rotter's Internal-External Scale (I-E). Individuals with high internal scores are more likely to exert efforts to control their environment and to take responsibility for their actions than those with high external scores. An external locus of control orientation indicates that goal attainment attributed to external factors outside the control of the individual. The external orientation has been divided into "powerful others" and "chance".⁴⁵ According to the concept of "external locus of control", patients will ask medical specialists for help, and may trust in a helping God.⁴⁶

Despite several studies on the subject,⁴⁷⁻⁵³ the protective effect of religious belief against cancer remains unclear. In many religious communities, it is expected that religious belief and practices have beneficial effects on health including decreased risks of cancer.⁴⁷⁻⁴⁹ In fact, the results of several epidemiological studies have shown that compared to the general population, members of certain religious communities are at lower risk for some types of cancer,⁴⁷⁻⁴⁹ have lower mortality rates,⁵⁰⁻⁵¹ and live longer.⁵²

This study examined the relationships between quality of life, coping strategies, and religious attitude in patients with cancer in Iran.

Methods

This was a cross-sectional study. The sample consisted of 384 patients selected through non-random convenient sampling procedure. The hospitalized patients and those attending the outpatient clinics at three general hospitals in Isfahan and Tehran, who met the inclusion criteria, were asked to participate in the study. The inclusion criteria were as follows; 18 years or older, at least 8 years of education, absence of any concomitant diseases, and lack of any type of communication problems.

After obtaining their verbal consent and informing them that participation in the study was voluntary and that they were free to discontinue their participation at any time without jeopardizing their ongoing treatment, the patients completed the research questionnaires. The measures used in the study included a demographic questionnaire, the Iranian version of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30),⁵⁴ the Cancer Coping Questionnaire,⁵⁵ and the Religious Attitude Questionnaire.⁵⁶

The Cancer Coping Questionnaire,⁵⁵ was translated into Farsi through back translation process and edited five times by authors. Then in a pilot study, 30 patients with cancer completed the Persian (Farsi) version of the questionnaire. The internal consistency and factor structure of the questionnaire were assessed through Chronbach's alpha. The Chronbach's alpha coefficient was 0.92.

The results of confirmatory factor analysis confirmed that the factors of the Persian version were compatible to the original version. This questionnaire consists of 21 items rated on a 4-point scale ranging from one (not at all) to four (very often). It is divided into two sections: Total Individual Scale (Items 1-14), which includes coping (Items 2, 6, 7, 11, 12), positive Focus (Items 1, 9, 14), diversion (Items 3, 4, 8) and planning (Items 5, 10, 13); and Interpersonal Scale (Items 15-21).

The European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30)⁵⁴ includes func-

tional scales comprises of physical functioning, role functioning, emotional functioning, cognitive functioning and social functioning; and global health status/Quality of Life (QoL) which is composed of symptom scales / items such as fatigue, nausea and vomiting, pain, dyspnoea, insomnia, appetite loss, constipation, diarrhea, financial difficulties.

The Religious Attitude Questionnaire is a Persian instrument developed by Shirshahi⁵⁶ for assessing Iranians' religious attitudes. It consists of 31 items to which the participants are asked to respond using a 5-point rating scale ranging from 0 (Never) to 4 (Always). The author reported a test-retest reliability coefficient of 0.82 and a Chronbach's alpha coefficient of 0.83.

The data were analyzed using SPSS 15. The level of significance was set at $p < 0.05$ for all analyses. Descriptive statistics were used to describe the characteristics of the sample. Kolmogorov-Smirnov was employed for normal distribution testing. Chi-square test, Student t-test, ANOVA, correlation test, and stepwise regression analysis were used to analyze data. Non-parametric tests such as Kruskal-Wallis Test and Mann-Whitney Test were used for non-normally distributed variables.

Results

The mean (SD) age of the sample was 48.9 (14.3) years, and more than half of them (55.5%) were men. Being married was in 86.9% of participants, and more than two-thirds had high school education or lower. More than one-third of participants were homemakers. In terms of the cancer type, 20.6% had breast cancer, 17.2% had lung cancer, 20.9% suffered Gastrointestinal (GI) tract cancer, 22.5% had leukemia, and 18.8% had prostate cancer. Most of the participants had undergone chemotherapy. The mean (SD) period between the initial diagnosis of cancer and participation in the project was 23.8 (26.4) months.

Table 1 shows the results of Iranian version of Quality of Life Questionnaire (EORTC QLQ-C30). Table 2 shows the results of Cancer Coping Questionnaire and the Religious Attitude

Questionnaire.

The results of correlation analyses revealed significant correlation between patients' scores on the Total scale of the Cancer Coping Questionnaire and their scores on the Global health status/QoL ($r = 0.11$, $p = 0.032$). The correlations between the total scale of the Cancer Coping Questionnaire and the subscales of the Quality of Life Questionnaire were as follows: with physical functioning ($r = 0.28$, $p < 0.0001$), with role functioning ($r = 0.16$, $p = 0.003$), with emotional functioning ($r = 0.30$, $p < 0.0001$), with cognitive functioning ($r = 0.23$, $p < 0.0001$),

and with social functioning ($r = 0.18$, $p = 0.001$). Also, the scores on the total scale of the Cancer Coping Questionnaire correlated negatively with fatigue ($r = -0.27$, $p < 0.001$), pain ($r = -0.18$, $p < 0.0001$), insomnia ($r = -0.11$, $p = 0.031$), correlated with diarrhea ($r = 0.18$, $p = 0.001$) and financial difficulties ($r = -0.24$, $p < 0.0001$).

The correlation coefficients between scores on the Religious Attitude Questionnaire and the Quality of Life Questionnaire were as follows: 0.323 ($p < 0.0001$) for global health status/QoL, 0.14 ($p = 0.005$) for cognitive functioning and 0.11 ($p = 0.033$) for fatigue. However, negative

Table 1. Mean and standard deviation of the patients' scores on the Quality of Life (QoL) Questionnaire

	Scales	Mean (SD)
Global health status/QoL*	Global health status/QoL	45.55 (22.18)
	Physical functioning	58.22(26.88)
	Role functioning	60.47(28.09)
Functional scales*	Emotional functioning	54.46(26.06)
	Cognitive functioning	60.77(25.30)
	Social functioning	58.04(30.00)
	Fatigue	46.43(26.16)
	Nausea and vomiting	28.45(27.36)
	Pain	44.78(46.18)
	Dyspnea	31.68(29.28)
Symptom scales/items**	Insomnia	44.73(30.80)
	Appetite loss	36.04(30.19)
	Constipation	27.32(28.44)
	Diarrhea	20.71(26.27)
	Financial difficulties	55.20(34.22)

* A high score for a functional scale represents a high/healthy level of functioning; a high score for the global health status/QoL represents a high QoL.

** A high score for a symptom scale/item represents a high level of symptomatology/problems.

Table 2. Mean and standard deviation of patients' scores of the Cancer Coping and the Religious Attitude Questionnaires

Questionnaire	Mean (SD)
Cancer Coping Questionnaire*	46.82(12.10)
Total Scale	30.77(8.52)
Interpersonal scale	15.96(4.80)
Religious Attitude Questionnaire*	85.52(21.05)

* A high score represents better situation

correlations were found between religious attitude scores and nausea and vomiting ($r = -0.14$, $p = 0.005$), dyspnea ($r = -0.17$, $p = 0.001$), constipation ($r = -0.11$, $p = 0.032$), diarrhea ($r = -0.19$, $p < 0.0001$) and correlated with financial difficulties ($r = 0.14$, $p = 0.005$).

No significant correlations were found between cancer coping (Total Individual Scale and Interpersonal Scale) and religious attitude measures in all types of cancer except for prostate cancer ($r = 0.224$, $p = 0.041$ and $r = 0.242$, $p = 0.041$, respectively). In addition, in patients older than 60, religious attitude measure significantly correlated with the Total and Interpersonal scales of cancer coping measures ($r = 0.272$, $p = 0.012$ and $r = 0.345$, $p = 0.001$, respectively).

Statistically significant correlations were found between types of cancer and age ($p < 0.0001$), cancer coping, the Total and Interpersonal scales ($p = 0.044$ and $p = 0.009$, respectively). No significant correlations were found between types of cancer and Religious attitude ($p > 0.05$).

In addition, the results revealed significant correlations between type of cancer and subscales of the Iranian version of EORTC QLQ-C30, i.e., physical functioning ($p = 0.006$), role functioning ($p = 0.007$), cognitive functioning ($p = 0.012$), social functioning ($p = 0.009$), fatigue ($p = 0.004$), nausea and vomiting ($p = 0.011$), pain ($p = 0.002$), dyspnea ($p = 0.001$), insomnia ($p = 0.03$), appetite loss ($p = 0.027$), and diarrhea ($p = 0.023$).

Statistically significant correlations were

also found between types of treatment and age ($p < 0.0001$), Cancer Coping Questionnaire Total Scale Score and Total Individual Scale score ($p = 0.015$ and $p = 0.006$, respectively), and Religious attitude measure ($p < 0.0001$).

Statistically significant correlations were found between gender and cancer coping, Total and Interpersonal scales scores ($p = 0.029$ and $p = 0.015$, respectively). However, no significant relationship was observed between gender and Religious attitude measure ($p > 0.05$).

Statistically significant relationships were found between age groups and cancer coping, Total scale, Total Individual and Interpersonal Scales scores ($p = 0.001$, $p < 0.0001$ and $p = 0.006$, respectively).

In a stepwise regression analysis, the authors examined relationships between Global Health Status as dependent variable and religious attitude, cancer coping and demographic characteristics as independent variables. Table 3 shows the result of this analysis.

Other stepwise regression analyses examined relationships between functional scales of EORTC QLQ-C30 as dependent variables and religious attitude and cancer coping and demographic characteristics as independent variables.

Stepwise regression analysis found significant relationship between physical functioning and Total Individual Scales of Cancer Coping Questionnaire ($\beta = 0.367$, $p < 0.0001$), age ($\beta = -0.159$, $p = 0.003$), type of cancer ($\beta = 0.148$, $p = 0.009$), job of patients ($\beta = -0.136$, $p = 0.02$) and Total Interpersonal Scales of Cancer Coping Questionnaire ($\beta = -0.138$, $p = 0.045$).

Table 3. Stepwise regression analysis of Global Health Status as dependent variable and Religious Attitude, Cancer Coping and demographic characteristics as independent variables

Model		Coefficients ^a				Sig.
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	
1	Religious Attitude Questionnaire	.344	.053	.0333	6.479	.000
2	Religious Attitude Questionnaire	.330	.052	.320	6.296	.000
	Total Individual Scales of Cancer Coping Questionnaire	.442	.131	.171	3.378	.001
3	Religious Attitude Questionnaire	.346	.051	.335	6.810	.000
	Total Individual Scales of Cancer Coping Questionnaire	2.379	.415	.923	5.731	.000
	Total Scales of Cancer Coping Questionnaire	-1.420	.290	-7.90	-4.900	.000

a. Dependent Variable: Global Health Status

Stepwise regression analysis found significant relationship between role functioning and Total Individual Scales of Cancer Coping Questionnaire ($\beta = 0.321$, $p < 0.0001$), Total Interpersonal Scales of Cancer Coping Questionnaire ($\beta = -0.247$, $p < 0.0001$), job of patients ($\beta = -0.306$, $p < 0.0001$), sex of patients ($\beta = -0.201$, $p = 0.011$) and age ($\beta = -0.123$, $p = 0.02$).

Stepwise regression analysis found significant relationship between emotional functioning and Total Individual Scales of Cancer Coping Questionnaire ($\beta = 0.569$, $p < 0.0001$), Total Interpersonal Scales of Cancer Coping Questionnaire ($\beta = -0.304$, $p < 0.0001$) and type of treatment ($\beta = -0.15$, $p = 0.002$).

Stepwise regression analysis found significant relationship between cognitive functioning and Total Individual Scales of Cancer Coping Questionnaire ($\beta = 0.346$, $p < 0.0001$), Religious Attitude Questionnaire ($\beta = 0.134$, $p = 0.01$) and Total Interpersonal Scales of Cancer Coping Questionnaire ($\beta = -0.135$, $p = 0.048$).

Stepwise regression analysis of Social Functioning found significant relationship between Total Individual Scales of Cancer Coping Questionnaire ($\beta = 1.084$, $p < 0.0001$), Total Scale of Cancer Coping Questionnaire ($\beta = -0.897$, $p < 0.0001$), job of patients ($\beta = -0.272$, $p = 0.001$) and sex of patients ($\beta = -0.198$, $p = 0.011$).

Another stepwise regression analyses examined relationships between Symptom scales / items of EORTC QLQ-C30 as dependent variables and religious attitude, cancer coping and demographic characteristics as independent variables.

Stepwise regression analysis found significant relationship between fatigue and Total Individual Scales of Cancer Coping Questionnaire ($\beta = -1.08$, $p < 0.0001$), Total Scales of Cancer Coping Questionnaire ($\beta = 0.781$, $p < 0.0001$) and type of treatment ($\beta = 0.208$, $p < 0.0001$).

Stepwise regression analysis found significant relationship between nausea and vomiting and Total Interpersonal Scales of Cancer Coping Questionnaire ($\beta = 0.345$, $p < 0.0001$), Total Individual Scales of Cancer Coping Questionnaire

($\beta = -0.236$, $p < 0.0001$), Religious Attitude Questionnaire ($\beta = -0.164$, $p = 0.002$) and type of cancer ($\beta = -0.132$, $p = 0.01$).

Stepwise regression analysis found significant relationship between pain and Total Individual Scales of Cancer Coping Questionnaire ($\beta = -0.2$, $p < 0.0001$) and type of treatment ($\beta = 0.132$, $p = 0.013$).

Stepwise regression analysis found significant relationship between dyspnea and Total Individual Scales of Cancer Coping Questionnaire ($\beta = -0.663$, $p < 0.0001$), Total Scales of Cancer Coping Questionnaire ($\beta = 0.542$, $p = 0.002$) and Religious Attitude Questionnaire ($\beta = -0.153$, $p < 0.004$).

Stepwise regression analysis found significant relationship between insomnia and Total Individual Scales of Cancer Coping Questionnaire ($\beta = -0.382$, $p < 0.0001$) and Total Interpersonal Scales of Cancer Coping Questionnaire ($\beta = 0.28$, $p < 0.0001$).

Stepwise regression analysis found significant relationship between appetite loss and age of patients ($\beta = 0.155$, $p < 0.004$) and type of cancer ($\beta = -0.113$, $p < 0.036$). Stepwise regression analysis found significant relationship between constipation and Religious Attitude Questionnaire ($\beta = -0.137$, $p < 0.011$).

Stepwise regression analysis found significant relationship between Diarrhea and Total Interpersonal Scales of Cancer Coping Questionnaire ($\beta = 0.212$, $p < 0.0001$), Religious Attitude Questionnaire ($\beta = -0.199$, $p < 0.0001$) and type of cancer ($\beta = -0.131$, $p < 0.012$).

Table 4 shows the result of stepwise regression analysis of financial difficulties as dependent variable and religious attitude, cancer coping and demographic characteristics as independent variables.

Discussion

The present study examined the relationships between quality of life, coping strategies, and religious attitude in a sample of Iranian patients with cancer. The results showed that religious attitude was a significant and important factor in coping with cancer.

Table 4. Stepwise regression analysis of Financial Difficulties as dependent variable and Religious Attitude, Cancer Coping and demographic characteristics as independent variables

Model		Coefficients ^a				
		Unstandrdized Coefficients		Standrdized Coefficients	t	Sig.
		B	Std.Error	Beta		
1	Total Individual Scales of Cancer Coping Questionnaire	-1.22	.203	-.308	-6.008	.000
2	Total Individual Scales of Cancer Coping Questionnaire	-1.118	.199	-.282.	-5.619	.000
	Type of treatment	8.207	1.809	.228	4.536	.000
3	Total Individual Scales of Cancer Coping Questionnaire	-3.839	.641	-.969	-5.991	.000
	Type of treatment	8.477	1.762	.235	4.810	.000
	Total Scales of Cancer Coping Questionnaire	1.990	.447	.721	4.454	.000
4	Total Individual Scales of Cancer Coping Questionnaire	-3.946	.639	-.996	-6.172	.000
	Type of treatment	8.376	1.754	.233	4.755	.000
	Total Scales of Cancer Coping Questionnaire	2.139	.450	.775	4.755	.000
	Job of patients	2.790	1.308	.107	2.134	.034
5	Total Individual Scales of Cancer Coping Questionnaire	-3.876	.634	-.978	-6.110	.000
	Type of treatment	8.000	1.745	.222	4.585	.000
	Total Scales of Cancer Coping Questionnaire	2.091	.446	.775	4.685	.000
	Job of patients	4.368	1.429	.168	3.057	.002
	Type of cancer	-3.354	1.276	-.140	-2.630	.009
6	Total Individual Scales of Cancer Coping Questionnaire	-3.816	.630	-.963	-6.054	.000
	Type of treatment	7.015	1.778	.195	3.944	.000
	Total Scales of Cancer Coping Questionnaire	2.019	.444	.731	4.545	.000
	Job of patients	4.731	1.426	.182	3.318	.001
	Type of cancer	-3.671	1.273	-.154	-2.884	.004
	Religious Attitude Questionnaire	.194	.079	.121	2.447	.015

a. Dependent Variable: Financial Difficulties

Consistent with the stated hypothesis, patients' quality of life correlated significantly with religious attitude as well as cancer coping measures. However, the results revealed no relationship between religious attitude and cancer coping measures except in patients with prostate cancer.

Several longitudinal studies reported correlation between spirituality and quality of life.⁵⁷ Furthermore, the results of various qualitative studies have indicated that many individuals have found that their religiosity has often in-

creased or deepened following the traumatic experience.

Our findings regarding the relationships between quality of life and cancer coping, as well as religious attitude are consistent with studies that have shown significant correlations between religiosity/spirituality and quality of life measures.^{39-41,58,59}

In particular, several studies have identified prayer as a significant coping strategy among physically ill individuals. For example, it was found that patients with both acute and chron-

ic conditions, such as sickle cell disease, arthritis, acute cystitis, human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), and renal disease often use prayer to help them cope with their illness.⁶⁰

In addition, the literature indicates that spiritual issues significantly affect the quality of life and health of cancer patients, and that spirituality facilitates cancer coping. Consequently, it has been suggested that spirituality should be considered as an integral part of the models addressing the quality of life in patients with life threatening diseases, and that spirituality measures should be included in studies examining the quality of life of such patients. The spiritual needs of cancer patients often include finding meaning and hope, having access to spiritual resources and drawing meaning from their suffering.⁶¹

As showed above, the regression analysis confirmed the relationships between QOL, Cancer coping and religious attitude and some demographic characteristics.

Limitations of this study include the potential influence of selection bias, statistically significant age and sex differences between pa-

tients with different types of cancer, and age difference between patients receiving different types of treatment. Finally, the cross-sectional nature of the study limits the interpretation of the relationship between quality of life, cancer coping and religious attitude.

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Conflict of Interests

Authors have no conflict of interests.

Authors' Contributions

All the authors have carried out the study, participated in the design of the study and acquisition of data performed the statistical analysis and wrote the manuscript. All authors read and approved the final manuscript.

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