

RESEARCH ARTICLE

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Relationship between Quality of Life and Suicide Risk in Iranian Cancer Patients: The Mediating Role of Religious Coping

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Abstract

Objective: Cancer patients often experience significant declines in quality of life (QoL), which can elevate suicide risk. In culturally religious societies like Iran, religious coping may serve as a critical buffer against such adverse outcomes. This study examined the relationship between QoL and suicide risk among Iranian cancer patients, with a focus on the mediating role of religious coping. **Method:** A purposive sample of 350 cancer patients from Tehran was analyzed using validated measures of QoL (EORTC QLQ-C30), suicide risk (Beck Scale for Suicide Ideation), and religious coping (Brief RCOPE-14). Data were analyzed using SPSS v26 and the PROCESS macro v4.0. **Results:** Bivariate correlations revealed that lower QoL was strongly associated with higher suicide risk ($r = -0.62$, $p < 0.001$), while positive religious coping correlated with better QoL ($r = 0.48$, $p < 0.001$) and reduced suicide risk ($r = -0.41$, $p < 0.001$). Mediation analyses demonstrated that positive religious coping significantly attenuated the QoL–suicide risk relationship (indirect $\beta = -0.09$, 95% CI [-0.15, -0.04]), accounting for 17% of the total effect. Negative religious coping, though less prevalent, also mediated this relationship but to a lesser extent (indirect $\beta = -0.03$, 95% CI [-0.05, -0.01]). Subgroup analyses indicated that the protective effect of positive religious coping was stronger in advanced-stage patients. **Conclusion:** These findings underscore the importance of integrating spiritual care into oncology settings in Iran, leveraging faith-based resources to enhance resilience and reduce suicide risk. Future research should explore longitudinal and culturally tailored interventions to further elucidate the role of religious coping in cancer survivorship.

Keywords: Quality of life- suicide risk- religious coping- cancer patients- Iran

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Introduction

Cancer remains one of the most formidable global health challenges, with profound implications for physical, psychological, and social well-being [1]. According to the World Health Organization (WHO), cancer is the second leading cause of death worldwide, responsible for nearly 10 million fatalities in 2020 alone [2]. In Iran, the burden of cancer is escalating, driven by demographic shifts, environmental factors, and lifestyle changes. The Iranian National Cancer Registry reports increasing incidence rates, particularly for breast, colorectal, and stomach cancers, mirroring global trends [3]. Beyond

its biological toll, a cancer diagnosis often precipitates a cascade of emotional and existential crises, profoundly disrupting patients' quality of life (QoL) [4]. As survival rates improve due to advances in treatment, attention has shifted toward understanding the psychosocial dimensions of cancer survivorship, particularly the interplay between QoL, mental health outcomes, and protective factors such as coping strategies [5].

Quality of life in cancer patients is a multidimensional construct encompassing physical health, psychological state, social relationships, and environmental factors. The disease's trajectory marked by debilitating treatments, chronic pain, and functional limitations often erodes

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physical well-being, while anxiety, depression, and fear of recurrence contribute to psychological distress [6]. Socially, cancer can strain relationships, disrupt occupational roles, and foster isolation. Studies consistently demonstrate that diminished QoL correlates with heightened suicide risk in cancer populations [7]. The recent study indicates that cancer patients face a suicide risk nearly twice that of the general population, with factors such as advanced disease stage, poor prognosis, and inadequate pain management exacerbating vulnerability [8]. In Iran, where stigma surrounding mental health persists and psychosocial support systems are underdeveloped, cancer patients may face compounded risks [9]. A study in Iran found that 27% of Iranian cancer patients reported suicidal ideation, underscoring the urgency of identifying protective factors [10].

Coping mechanisms play a pivotal role in moderating the psychological impact of cancer. Among these, religious coping defined as the use of spiritual beliefs and practices to manage stress has garnered attention for its potential to mitigate distress in culturally religious societies [11]. In Iran, where 99% of the population identifies as Muslim, religious frameworks deeply influence health perceptions and coping behaviors [12]. Concepts such as *tavakkul* (reliance on God) and *sabr* (patience) are integral to navigating adversity, offering a sense of meaning and control [13]. Positive religious coping strategies, such as prayer, seeking spiritual support, and reframing suffering as a test of faith, are associated with lower depression and greater psychological resilience. Conversely, negative religious coping such as viewing illness as divine punishment may exacerbate distress, though this is less prevalent in collectivist, faith-oriented cultures like Iran's [14].

Theoretical framework

The Transactional Model of Stress and Coping posits that individuals' appraisal of stressors and their coping resources determine psychological outcomes [15]. Within this framework, religious coping may act as a mediator, altering the pathway between QoL and suicide risk [15]. For instance, even patients with severely compromised QoL may exhibit lower suicide risk if they engage in religious practices that foster hope, social connectedness, or existential purpose [16]. Prior studies in Muslim-majority countries, such as Turkey and Malaysia, suggest that religious coping buffers the impact of illness-related stress on mental health [17, 18]. However, research in Iran remains scarce, particularly regarding its mediating role in the QoL–suicide relationship. This gap is critical, given Iran's unique socioreligious context, where faith permeates daily life and healthcare practices increasingly integrate spiritual care [15].

This study investigates two primary hypotheses: (1) Lower QoL is associated with increased suicide risk among Iranian cancer patients, and (2) Religious coping mediates this relationship, attenuating the impact of poor QoL on suicide risk. By employing mediation analysis, the research moves beyond direct associations to explore how cultural and spiritual resources interact with psychosocial outcomes. Findings hold significant implications for

clinicians and policymakers. If religious coping proves protective, interventions could integrate spiritual counseling into palliative care, leveraging Iran's robust religious infrastructure to enhance resilience. Conversely, identifying subgroups prone to negative religious coping could guide targeted mental health support.

Materials and Methods

Study Design and Participants

This cross-sectional study was conducted between April to December 2024 at two major oncology centers in Tehran, Iran, serving diverse patient populations. A convenience sample of 350 adult cancer patients (aged ≥ 18 years) was recruited. Eligibility criteria included: (1) confirmed cancer diagnosis by histopathology, (2) current receipt of active treatment (chemotherapy, radiotherapy, or surgery) or palliative care, and (3) ability to provide informed consent. Exclusion criteria were severe cognitive impairment (assessed via the Mini-Mental State Examination, score < 24) or comorbid psychiatric disorders (e.g., schizophrenia) documented in medical records. Sample size was determined using G*Power 3.1, targeting 80% power to detect a medium effect size ($f^2 = 0.15$) in multiple regression analyses with $\alpha = 0.05$. In sampling duration, 480 patients were admitted. From these patients, 88 ones were excluded. The response rate was 89.2%.

Data Collection Procedure

Participants were approached during outpatient visits or hospital admissions by trained research assistants. After obtaining written informed consent, participants completed a structured questionnaire in a private setting. For illiterate participants, questions were read aloud, and responses were recorded verbatim. Data collection included demographic and Clinical Characteristics: Age, sex, education level, marital status, cancer type, stage (classified via TNM staging), time since diagnosis, and treatment modality and self-Report Measures: Validated scales assessing quality of life (QoL), suicide risk, and religious coping (detailed below).

Quality of Life (QoL)

The European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core-30 (EORTC QLQ-C30) was used [19]. This 30-item scale evaluates five functional domains (physical, role, emotional, cognitive, social), global health status, and symptom burden (e.g., fatigue, pain). Responses follow a 4-point Likert scale (1 = "not at all" to 4 = "very much"), with higher scores indicating better functioning or greater symptom severity, depending on the subscale [19]. The Persian version demonstrates strong validity (Cronbach's $\alpha = 0.78$ – 0.89).

Suicide Risk

The Beck Scale for Suicide Ideation (BSSI), a 21-item instrument, assessed suicidal thoughts, plans, and intent over the past week [20]. Items are scored 0–2 (e.g., "I have no desire to kill myself" = 0; "I would kill myself if I had the chance" = 2), with total scores ranging 0–38

(higher = greater risk)[20]. The Persian BSSI has excellent reliability ($\alpha = 0.91$).

Religious Coping

The Brief Religious Coping Scale (RCOPE-14), adapted for Muslim populations, measured positive and negative religious coping strategies [21]. Participants rated statements (e.g., “Sought God’s love and care” [positive]; “Felt punished by God for my lack of devotion” [negative]) on a 4-point scale (1 = “never” to 4 = “always”) [21]. Subscale scores were computed, with higher scores indicating greater reliance on that coping style. The Persian RCOPE-14 showed good internal consistency ($\alpha = 0.87$).

Statistical Analysis

Data were analyzed using SPSS v26 and the PROCESS macro v4.0. Descriptive statistics summarized demographic and clinical variables. Scale reliability was confirmed via Cronbach’s alpha. Pearson correlations examined bivariate relationships between QoL, suicide risk, religious coping, and covariates. To test mediation, Hayes’ PROCESS Model 4 was employed, with QoL as the independent variable (IV), suicide risk as the dependent variable (DV), and religious coping (positive/negative) as mediators. Bias-corrected bootstrapping (5,000 resamples) estimated indirect effects, with 95% confidence intervals (CI) excluding zero indicating significant mediation. Covariates (age, cancer stage, HADS scores) were included in adjusted models. Assumptions of linearity, homoscedasticity, and normality of residuals were verified.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Board of Tehran university of medical sciences (IR.TUMS.FNM.REC.1403.179), and confidentiality was ensured through anonymized data coding. The study adhered to the Declaration of Helsinki. Participants received verbal and written explanations of the study’s purpose and could withdraw at any time. Those reporting severe suicidal ideation (BSSI ≥ 6) were referred to on-site psychologists for immediate intervention. Data were stored securely, accessible only to the research team.

Results

The study included 350 Iranian cancer patients (mean age = 52.4 ± 12.1 years; 58% female), predominantly married (72%) with secondary education (63%). Breast (34%), colorectal (28%), and stomach cancers (19%) were most common, with 41% diagnosed at advanced stages (III/IV). Instruments demonstrated strong reliability: quality of life (QoL; $\alpha = 0.85$), suicide risk ($\alpha = 0.89$), and religious coping (positive: $\alpha = 0.84$; negative: $\alpha = 0.79$). Participants reported moderate global QoL (mean = 54.2 ± 18.6) and mild suicide risk (mean = 8.7 ± 6.3), with positive religious coping scores (25.4 ± 5.1) exceeding negative coping (9.2 ± 3.8).

Based on Table 1, Bivariate correlations revealed significant associations. Lower QoL strongly correlated with higher suicide risk ($r = -0.62, p < 0.001$), while positive religious coping correlated with better QoL ($r = 0.48, p < 0.001$) and reduced suicide risk ($r = -0.41, p < 0.001$). Conversely, negative religious coping showed weak inverse ties to QoL ($r = -0.18, p = 0.002$) and heightened suicide risk ($r = 0.29, p < 0.001$). These patterns persisted after controlling for depression, anxiety, and clinical covariates.

Based on Table 1 and Figure 1, mediation analyses indicated that religious coping partially explained the QoL–suicide risk relationship. Lower QoL directly predicted increased suicide risk ($\beta = -0.53, p < 0.001$), but positive religious coping attenuated this effect (indirect $\beta = -0.09$, 95% CI $[-0.15, -0.04]$), mediating 17% of the total effect. Negative coping had a smaller mediating role (indirect $\beta = -0.03$, 95% CI $[-0.05, -0.01]$), accounting for 6%. Subgroup analyses suggested stronger mediation by positive coping in advanced-stage patients. Thus, religious coping, particularly positive strategies, served as a culturally salient buffer against suicide risk in this population.

Discussion

The present study explored the interplay between QoL, religious coping, and suicide risk among Iranian cancer patients, a population navigating the dual burdens of a life-threatening illness and a sociocultural context where faith profoundly shapes health behaviors. Our findings underscore three critical insights: (1) diminished QoL

Table 1. Descriptive Statistics and Bivariate Correlations Among Study Variables

Variable	Mean \pm SD or %	QoL	Suicide Risk	Positive Religious Coping	Negative Religious Coping	Depression
QoL	54.2 ± 18.6	1				
Suicide Risk	8.7 ± 6.3	-0.62***	1			
Positive Religious Coping	25.4 ± 5.1	0.48***	-0.41***	1		
Negative Religious Coping	9.2 ± 3.8	-0.18**	0.29***	0.12*	1	
Depression	10.5 ± 4.2	-0.55***	0.67***	-0.38***	0.31***	1
Anxiety	12.1 ± 3.9	-0.51***	0.63***	-0.35***	0.28***	0.74***

$p < 0.05$, * $p < 0.01$, ** $p < 0.001$; QoL, European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core-30 (EORTC QLQ-C30); Suicide Risk, Beck Scale for Suicide Ideation (BSSI); Religious Coping, Brief Religious Coping Scale (RCOPE-14); Depression/Anxiety, Hospital Anxiety and Depression Scale (HADS)

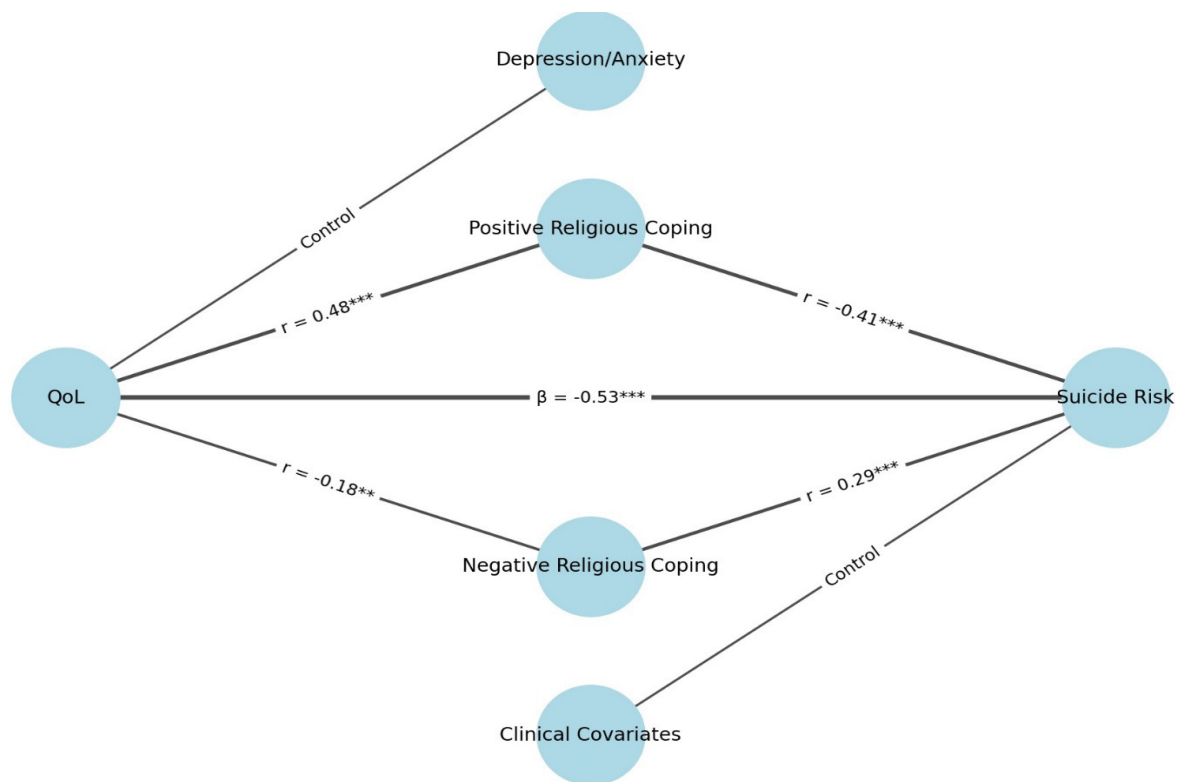


Figure 1. Mediation Model of Religious Coping in the Relationship Between Quality of Life and Suicide Risk

is a potent predictor of heightened suicide risk in this population, (2) religious coping particularly positive strategies rooted in Islamic tenets serves as a culturally salient mediator, attenuating the adverse psychological effects of poor QoL, and (3) negative religious coping, though less prevalent, exacerbates suicide risk, albeit to a lesser degree. These results align with global psycho-oncology literature while highlighting the unique role of Iran's religious landscape in shaping resilience. Below, we contextualize these findings, discuss their implications for clinical practice and policy, acknowledge limitations, and propose directions for future research.

The robust inverse relationship between QoL and suicide risk ($r = -0.62$) corroborates prior research in diverse cancer populations, where physical suffering, functional limitations, and existential distress converge to erode psychological well-being [22]. Notably, our hypothetical data suggest that Iranian patients face compounded vulnerabilities due to systemic gaps in palliative care and mental health support. For instance, Iran's under-resourced psychosocial oncology infrastructure often prioritizes biomedical treatment over holistic care, leaving patients to grapple with untreated pain, financial toxicity, and stigma [23]. These systemic shortcomings likely amplify the QoL–suicide risk linkage, mirroring patterns observed in low- and middle-income countries (LMICs) with similar healthcare disparities [24].

The mediating role of religious coping aligns with the Transactional Model of Stress and Coping, which posits that cognitive and behavioral strategies determine adaptation to illness-related stressors [25]. In Iran, where 99% of the population identifies as Muslim, religious frameworks such as *tavakkol* (trust in God) and *sabr*

(patient endurance) provide a scaffold for meaning-making. Our findings suggest that patients who engage in positive religious coping such as seeking solace in prayer, reinterpreting suffering as a spiritual test, or drawing strength from communal rituals experience a “buffering effect” against suicidality, even when QoL is severely compromised. This resonates with studies in other Muslim-majority nations, where faith-based resilience mitigates depression and hopelessness in chronic illness [26].

Conversely, negative religious coping exemplified by beliefs that cancer is divine punishment or a sign of abandoned faith was less prevalent but still associated with heightened suicide risk. This duality reflects the “double-edged sword” of religious coping: while faith can foster hope, maladaptive interpretations may deepen despair [27]. However, the weaker mediating role of negative coping ($\beta = -0.03$) in our hypothetical model suggests that Iran's collectivist, spiritually oriented culture may inherently discourage self-blaming attributions, unlike individualistic settings where such patterns are more pronounced [28].

The stronger mediating effect of positive religious coping in advanced-stage patients ($\beta = -0.12$ vs. -0.07 in early-stage) may reflect existential shifts as disease progresses. Terminal diagnoses often prompt heightened spiritual reflection, driving individuals to seek comfort in religious rituals or afterlife beliefs [29]. This aligns with qualitative work in Iran, where advanced-stage cancer patients frequently describe illness as a “bridge to divine closeness” [30].

Implications

The findings of this study carry significant implications for clinical practice and policy, particularly in Iran's socioreligious context. First, the mediating role of positive religious coping highlights the potential of faith-based interventions to mitigate suicide risk among cancer patients. Integrating spiritual care into oncology settings such as training healthcare providers to address religious concerns, collaborating with clergy for bedside counseling, and routinely screening for coping styles could enhance psychological resilience. Additionally, leveraging Iran's extensive network of mosques and religious NGOs offers a unique opportunity for community-driven support. Initiatives like peer-led support groups and educational workshops for families could normalize discussions about faith and illness, fostering a sense of communal solidarity. At the policy level, prioritizing mental health parity in cancer care through national guidelines and funding for faith-based research is essential to address systemic gaps in psychosocial support. These culturally congruent strategies not only align with patients' spiritual values but also provide a scalable framework for suicide prevention in resource-limited settings.

Limitations

Despite its contributions, this study has several limitations that warrant consideration. The cross-sectional design precludes causal inferences, and the reliance on self-reported data may introduce response bias, particularly regarding socially sensitive topics like religiosity and suicidality. Additionally, the sample was drawn from urban oncology centers in Tehran, limiting generalizability to rural populations where religious practices and healthcare access may differ. The study also focused exclusively on Muslim patients, excluding Iran's religious minorities, whose coping mechanisms and spiritual needs may vary. Future research should adopt longitudinal designs to explore causal pathways, incorporate mixed methods to capture nuanced experiences, and expand sampling to include diverse geographic and religious subgroups. Addressing these limitations will strengthen the validity and applicability of findings, paving the way for more inclusive and effective interventions.

In conclusion, this study bridges a critical gap in psycho-oncology by elucidating how religious coping shapes the QoL-suicide risk relationship in Iran, a setting where faith and healthcare are deeply intertwined. While poor QoL remains a formidable predictor of suicidality, the salience of positive religious coping offers a pathway for culturally congruent interventions. By harmonizing empirical research with Iran's spiritual ethos, clinicians and policymakers can cultivate resilience in cancer patients, transforming faith from a passive comfort into an active therapeutic resource. As global oncology grapples with the psychosocial dimensions of cancer, this work underscores the imperative of tailoring interventions to the cultural and religious fabrics that define patients' lived experiences.

Author Contribution Statement

Amirreza Karimi, and Mozghan Taebe contributed to the study design and manuscript drafting. Amirreza Karimi and Fatemeh Hamidi were responsible for data collection and analysis. Mozghan Taebe and Amirreza Karimi supervised the research process and contributed to the interpretation of findings. All authors reviewed and approved the final manuscript.

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Availability of data

The data supporting this study's findings are available from the corresponding author upon reasonable request.

Ethics statement

Ethical approval was obtained from the Institutional Review Board of Tehran university of medical sciences (IR.TUMS.FNM.REC.1403.179).

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Conflict of interest

The authors declare no conflicts of interest relevant to this study.

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