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Research Paper

# The Effectiveness of Spiritual Group Therapy and Acceptance and Commitment Therapy in Increasing Life Expectancy and Quality of Life Among Cancer Patients

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## ABSTRACT

**Background and Objectives:** Improving or reducing the stress caused by cancer in patients is possible with different psychological approaches. Therefore, we compared the effectiveness of spiritual therapy and acceptance and commitment therapy on life expectancy (LE) and quality of life (QoL) of cancer patients.

**Methods:** This quasi-experimental study with the pre-test and post-test and follow-up design and a control group was conducted in 2020, in which we randomly selected 45 cancer patients admitted to the Taleghani Hospital in Kermanshah Province who were divided into three groups: spiritual therapy, acceptance and commitment therapy, and control groups. After the treatment, we compared the three groups' scores on the QoL questionnaire and LE questionnaire by Schneider by SPSS software, version 20 and analysis of covariance.

**Results:** The mean age of patients was 28±14 years. A family history of cancer was observed in 14% of patients. There were no significant differences in the pre-test (17.04±2.35) and post-test (18.19±2.11) scores of LE in the control group. The results of the analysis of covariance showed a significant difference (P<0.01) between the post-test scores of QoL and LE in the treatment groups compared to the control group.

**Conclusion:** Both types of treatments were effective in patients and increased their QoL and LE. However, spiritual therapy had a greater effect on the QoL and LE among cancer patients compared to acceptance and commitment therapy.

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## Introduction

Cancer is the second leading cause of death after cardiovascular disease [1, 2]. Most cancers have no definitive cure, and surgery, radiation therapy, chemotherapy, hormone therapy, bone marrow transplantation, and other methods are used to prevent their growth and development, which all are invasive. The fear of hearing the word chemotherapy causes cancer patients to suffer not only physically but also socially, mentally, and spiritually [3]. In addition, patients require regular treatment and periodic care and the use of various and expensive drugs and may require surgery and, in some cases, removal of the affected organ. This can lead to organ deformity and negative body image and affect their self-confidence, quality of life (QoL), hope, and mental health [4]. The financial burden of treatment costs, the incurability of cancer, and high mortality impose additional environmental and psychological pressures on this group [5]. Cancer patients usually experience severe stress and suffer from a psychiatric disorder [6]. The most common disorder is the adaptive disorder with emotional subgroups, such as depression and anxiety [7]. Cancer causes patients to have low anxiety tolerance [8]. Anxiety tolerance is defined as a person's ability to experience and tolerate negative emotional states [9], which can have different intensities in each person that refer to the level of experience and resistance to emotional and physical discomfort [10]. Therefore, due to low flexibility, the person considers the stressful situation as an uncontrollable situation, thinks less about the use of different options solutions, and treatments, and becomes pessimistic about his/her efforts to solve the disease, which in turn leads to increased anger, sadness, worry, depression, and low tolerance for anxiety [11]. Therefore, the progression of the disease and its complications affect the individual and social functioning of patients in a multifaceted way and cause them many psychological issues; thus, attention to resolving patients' internal conflicts is necessary to maintain their mental health [5, 12]. Improving or reducing the stress caused by cancer in patients is also possible with different psychological approaches [12]. One of these new psychological approaches that has been effective in reducing psychological distress is acceptance and commitment therapy (ACT), which was introduced by Hayes et al. in the 1980s [13]. Focusing on ACT based on psychological events and processes, such as thought and emotion to strongly emphasize purposeful values and behaviors can contribute to flexibility and adaptability. The goal of this treatment is to help patients reach a level of psychological flexibility to accept what they cannot change and try to change what they can [14, 15]. Spiritual therapy is another effective approach in reducing the psychological distress of cancer patients. Cancer patients often use spiritual beliefs as a means to gain meaning not only during the disease but also in the recovery process, and consider these beliefs as a means and a way to cope and understand the meaning of death [16]. In other words, cancer disrupts the normal functioning of patients' lives and has a negative impact on patients' mental health. However, spiritual beliefs, in a world where one experiences communication with himself, connection with others and nature, and even connection with a transcendental force, are effective in reaching a purposeful life and improving the disease as well as increasing the life expectancy (LE) of patients [17]. According to the World Health Organization (WHO) and the US national quality association, the spiritual and religious dimensions of a patient's life should be considered in comprehensive and multidimensional care [18]. So far no study has compared the effectiveness of spiritual therapy an ACT in increasing LE and QoL of cancer patients. Thus, we decided to assess the effect of this method on cancer patients in Kermanshah in 2020. Our hypothesis was that spiritual therapy and ACT are effective in patients' QoL and LE and ACT is more effective than spiritual therapy in this regard.

## Methods

The present study is quasi-experimental with the pretest-post-test and follow-up design and a control group carried out on 45 cancer patients with leukemia admitted to the oncology ward of Ayatollah Taleghani Hospital in Kermanshah in 2020. After leaving the hospital, patients were identified and followed up through their files in the hospital archive, and after the study description, those who filled out the informed consent were included in the study. Inclusion criteria besides cancer included starting chemotherapy in the past month, literacy, lack of comorbidity, the age of 18-50 years, and patient's consent to participate in the study. Exclusion criteria included a history of mental illness, a history of depression before cancer diagnosis, the absence of more than two times in treatment sessions, unwillingness to continue the study, deterioration of the patient's physical condition, and inability to participate in treatment sessions.

Patients were divided into three groups of 15 and the spiritual therapy group was treated in ten 90-minute spiritual therapy sessions as follows: Preliminary session: Preparing the client: Familiarizing the client with the general objectives of the treatment, explaining the general lines of

the sessions and the place and time of the session, and performing the pre-test. Session 1: Asking clients to tell their story about how they got the disease and their emotional and behavioral reactions to it, helping to create a safe and dynamic treatment environment, helping the client to express themselves and self-disclosure, helping to be here and now, and examining the longitudinal section of behavior, feeling, and thought. Session 2: Creating a space for the clients to be in order to experience themselves, facilitating the expression of spiritual/religious beliefs and practices of the therapist and how to communicate with God, recognizing the spiritual coping style of the clients by evaluating thoughts and rules and challenging them, correcting the client's cognitive distortions in the field of God's image, correcting the client's cognitive distortions in attributing the cause of the child's illness to their past sins (retribution from God), and assessing the cause of cancer from the client's perspective and extracting existing cognitive errors. Session 3: Facing the concept of existential anxiety, dealing with the concept of unpredictability, evaluating the thoughts and hypotheses of the authorities, challenging the mentioned thoughts through cognitive techniques correcting the distortions hidden in them, and establishing honest relationships with yourself, others, and God. Session 4: Working with the theme of death anxiety when expressing a reaction to a cancer disorder, helping to face the reality of death, helping to express thoughts and meanings hidden in the fear of death, talking about losing the opportunity to make up for past mistakes, correction of existing cognitive distortions in the meaning of existential anxiety of death from the perspective of treatment, and encouraging officials to participate in spiritual/religious ceremonies and rites with the theme of death and reading parts of the verses of the Qur'an with the theme of death and narrations and hadiths in this context and thinking about them. Session 5: Talking about how to do the assignments of the previous session and encouraging the client to express the individual meaning he/she derives from those themes and assignments and working on them, helping to create new meaning in the cause of possible death, investigating the difference between the general meaning of an event and the meaning of the situation, challenge with that meaning or in other words, challenge with the concept of losing meaning in life, and teaching spiritual skills. Session 6: Helping to accept meaningful responsibility for life experiences, helping re-evaluate life priorities and experiences, using the spiritual/religious beliefs of the authorities in finding meaning, assisting the therapist in finding an efficient meaning free of cognitive distortions, and helping the accept acceptance of a sense of responsibility for your own destiny. Session 7: Challenge with the concept of suffering, assisting the client in accepting suffering following the semantic process through cognitive techniques, helping the client to search more for his/her proven reality in order to get rid of suffering and accept it, encouraging authorities to think about spiritual/religious verses and hadiths in the field of acceptance, and helping the client to meet his or her spiritual needs in this regard, such as forgiving oneself and establishing honest relationships with oneself, others, and God. Session 8: Talking to the therapist about an identity that has become dysfunctional and confusing as a result of a dysfunctional meaning process, helping to build the client's new identity to fit the new situation, and teaching meditation, prayer, how to find spiritual refuge and other spiritual practices to achieve peace in times of need. Session 9 (final stage): Summarizing the previous meetings and helping the client to reach these views that there is a personal meaning behind the interpretation of every experience and the person has unconditional freedom in choosing this meaning. Understanding that God Almighty is not human and attributing attributes to God, such as retribution, failure, anger, etc. by the healer is beyond his transcendent nature, and investigating the effect of interventions and modified cognitive distortions on the extent, to which the spiritual needs of the existential anxieties of the clients are met. Session 10: Summarizing all the topics raised with the help of the client, laying the groundwork for replacing shelters, providing spiritual soothing, etc. (external support) instead of treatment sessions, and performing the post-test.

The ACT group received 8 90-minute sessions of ACT as follows: Session 1: Therapist's familiarity with patients, description of group rules, introduction and general description of the treatment approach, and providing the list of five examples of the most important issues that patients face in life as homework. Session 2: Assessing the homework of the previous session, assessing patients' problems from the perspective of ACT, extracting the experience of avoidance, integration, and values of the individual, and, preparing a list of advantages and disadvantages and ways to control problems as homework. Session 3: Reviewing last week's homework, specifying the inefficiencies of controlling negative events using metaphors, and teaching the tendency toward negative emotions and experiences. Session 4: Reviewing the previous session's homework, learning to separate evaluations from personal experiences (bad cup metaphor), and taking a position of observing thoughts without judgment, and homework, including recording cases, in which patients have not been able to observe and evaluate their experiences and emotions. Session 5: A review of the assignment of the previous session, communication with the present and considering yourself as a background (chess page metaphor), teaching

mindfulness techniques, and homework, including recording cases, in which patients have been able to observe thoughts using mindfulness techniques. Session 6: Assessing the task of the previous session, identifying patients' life values and measuring values based on their importance, homework, including making a list of obstacles to achieving one's values. Session 7: Review the assignment of the previous session, providing practical solutions to remove barriers while using metaphors, plan for a commitment to pursue values, and mentioning the achievements of treatment sessions. Session 8: Summarizing the concepts explored during treatment sessions, asking members to describe their treatment outcomes and purpose, planning for continuing life, preparing for the termination of treatment, and dealing with possible post-treatment failures.

The control group received no training and was matched with the treated groups in terms of age and gender. Before the treatment sessions and after the treatment, all patients were given the WHO QoL questionnaire, whose reliability was approved by Safaee et al. [19], and the Schneider LE questionnaire, whose reliability was approved by Zahed Babolan et al. [20]. Patients were taught how to respond by an informed person. Then, the patients answered the questionnaires individually and the data were analyzed using SPSS software, version 20. by analysis of covariance (ANCOVA). The Shapiro-Wilk test was used to evaluate the default normality of analysis of covariance, Levene's test was used to evaluate the homogeneity of variances, and to evaluate the homogeneity of regression slopes, the comparison of the interaction effect of pre-test and group in multiple linear regression model was utilized.

## Results

Of the 45 patients included in the study, 14 cases were female and 31 cases were male. The mean age of patients was 28±14 years (females: 18-49 and males: 22-45). Also, 75% of patients were single and 25% were married. First-degree family history of cancer was observed in 14% of patients. The normal distribution of the data was proved using the Shapiro–Wilk test (P>0.1).

**Table 1.** Mean pre-test and post-test scores of QoL and LE subscales in the three group (n=15)

| Variables | | Group | Mean±SD | |
|---|---|---|---|---|
| | | | Pre-test | Post-test |
| QoL | Physical health | Control | 14.13±2.604 | 14.19±2.316 |
| | | ACT | 14.38±2.156 | 16.50±2.033 |
| | | Spirituality therapy | 14.19±1.759 | 21.31±1.822 |
| | Mental health | Control | 13.44±4.427 | 13.0±3.347 |
| | | ACT | 13.94±4.809 | 17.98±4.483 |
| | | Spirituality therapy | 13.69±4.127 | 22.06±4.582 |
| | Community relations | Control | 13.69±4.453 | 13.19±4.135 |
| | | ACT | 13.38±4.425 | 15.94±4.090 |
| | | Spirituality therapy | 13.13±4.911 | 18.75±4.235 |
| | Living environment | Control | 21.25±2.216 | 20.38±5.875 |
| | | ACT | 20.69±2.631 | 25.75±6.618 |
| | | Spirituality therapy | 20.0±3.335 | 29.13±6.869 |
| LE | | Control | 17.04±2.356 | 18.19±2.114 |
| | | ACT | 17.85±2.102 | 23.03±2.546 |
| | | Spirituality therapy | 18.08±1.345 | 28.13±2.285 |

ACT: Acceptance and commitment therapy.

**Table 2.** MANCOVA to compare the mean scores of QoL and LE in the two experimental groups ACT and spiritual therapy

| Variables | Indicator | Value | F | df | df Error | P |
|---|---|---|---|---|---|---|
| QoL | Pillai's effect | 0.354 | 4.558 | 3 | 25 | 0.001 |
| | Lambda Wickles | 0.646 | 4.558 | 3 | 25 | 0.001 |
| | Hotelling's effect | 0.547 | 4.558 | 3 | 25 | 0.001 |
| | Roy's largest root | 0.547 | 4.558 | 3 | 25 | 0.001 |
| LE | Pillai's effect | 0.212 | 3.229 | 3 | 25 | 0.001 |
| | Lambda Wickles | 0.508 | 3.229 | 3 | 25 | 0.001 |
| | Hotelling's effect | 0.369 | 3.229 | 3 | 25 | 0.001 |
| | Roy's largest root | 0.369 | 3.229 | 3 | 25 | 0.001 |

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The pre-test mean scores of QoL and LE did not change in the control group compared to post-test scores. However, a noticeable change can be observed in the post-test mean scores of QoL and LE in the experimental groups compared to the pre-test scores (Table 1). The results of Levene's test showed the assumption of equal variance ($P<0.05$). In addition, the results of the M Box test (homogeneity of variance-covariance matrices) confirmed the assumption of equal covariance in all analyses. In order to investigate the hypothesis of homogeneity of regression slopes, the interaction of dependent variables and auxiliary variables was investigated and the results showed that the assumptions of the multivariate analysis of covariance (MANCOVA) were met. Table 2 presents the results of the multivariate analysis of covariance to compare the mean scores of QoL and LE dimensions.

As shown in Table 2, the spiritual therapy and ACT groups had significant differences in terms of QoL and LE. In other words, all participants receiving one of the study interventions (spirituality therapy and ACT) had a significant difference in at least one of the dependent variables (LE and QoL). To find out the details of this significant difference, MANCOVA was used, and its results are shown in Table 3.

Table 3 shows the results of the effect tests between the subjects to compare the mean post-test scores of LE in the two experimental groups (ACT and spiritual therapy). The source of group changes and the F-value of 7.254 show the difference between LE post-test scores in the two experimental groups (ACT and spiritual therapy) ($P<0.01$). Therefore, the null and research hypotheses based on the difference between the effect of ACT and spiritual therapy on increasing LE were accepted. It is also observed that the effect of spiritual therapy on increasing LE was 0.56 compared to ACT.

**Table 3.** Comparison of the mean post-test scores of QoL and LE in the two experimental groups ACT and spiritual therapy

| Variables | Dependent Variables | Sum of Squares | df | Mean Squares | F | P | Effect Size | Test Power |
|---|---|---|---|---|---|---|---|---|
| QoL group | Physical health | 13.767 | 1 | 13.767 | 4.287 | 0.048 | 0.137 | 0.937 |
| | Mental health | 38.369 | 1 | 38.369 | 6.775 | 0.015 | 0.201 | 0.884 |
| | Social relations | 22.253 | 1 | 22.253 | 7.254 | 0.012 | 0.212 | 0.738 |
| | Living environment | 26.359 | 1 | 26.359 | 6.269 | 0.008 | 0.254 | 0.987 |
| LE group | LE | 21.384 | 1 | 21.384 | 6.921 | 0.026 | 0.567 | 0.852 |

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## Discussion

This study compared the effectiveness of spiritual therapy and ACT in increasing LE and QoL of cancer patients in Kermanshah Province. The results showed that the control group that did not receive any intervention did not show a significant change in LE and QoL. However, there was a significant change in the pre-test and post-test scores of the ACT group. Also, following the elimination of the effects of the intervening variable (pre-test scores), there was a significant difference compared to the control group, which means an increase in LE and QoL in cancer patients. This result is in line with that of Mohammadizadeh et al. [21], Omidbeygi et al. [22], Tomich et al. [23], and Mohammadi et al. [24] in terms of increasing the QoL after receiving ACT. ACT allows cancer patients to accept their feelings, emotions, and thoughts despite being unpleasant, and to reduce hypersensitivity to the disease, resulting in a higher level of satisfaction and QoL. This treatment helps patients not to think of themselves as failed, damaged, or hopeless, and to make life meaningful and valuable [25]. ACT also increased the LE of cancer patients, which is consistent with the results of Moghadamfar et al. [26]. One of the most important treatment techniques based on acceptance and commitment is to specify values and committed actions. Encouraging cancer patients to identify values and determine goals, actions, and finally commit to taking actions to achieve goals and moving in the path of values despite problems, will make this group of patients achieve their goals and ultimate happiness and get rid of negative emotions, such as anxiety, stress, frustration, and depression, which in turn exacerbate other problems. Another effective process in ACT is the introduction of an alternative to control, namely desire and acceptance. These components make it possible for patients to accept unpleasant internal experiences without trying to control them, which makes those experiences seem less threatening and less impactful on one's life [27]. An increase in the pre-test and post-test scores of LE and QoL was observed in the spiritual group compared to the control group. In terms of increasing the QoL of cancer patients, this is in line with the studies by Mohammadizadeh [21] and Karimi et al. [28]. Regarding the significant role of religious and spiritual beliefs in improving the QoL of cancer patients, it can be mentioned that in fact spiritual interventions in the treatment of cancer patients make them able to use their spiritual resources to solve physical and mental problems and live better lives, which by mastering the environment, goal and orientation in life, self-acceptance and filling the gap of meaning and meaning and purpose in life helps psychological adjustment in acute stages and treatment outcomes [29]. Also, in terms of increasing LE following spiritual therapy in cancer patients, our results agree with those of Gianbaqeri et al. [30] and Rahmanian et al. [31]. It can be said that spirituality is a way to create meaning during problematic events. Spiritual and religious beliefs provide a source of meaning and hope in human beings. Research on spirituality and hope indicates that hope is positively associated with spiritual well-being and psychological well-being [32]. Spiritual therapy was more effective in the QoL and LE of cancer patients than ACT, which is in line with the studies by Mohammadizadeh et al. [33] and Rostami et al. [34]. Religion is one of the oldest and most common manifestations of the human spirit. Therefore, the importance of religious attitude cannot be ignored, at least from a social and historical point of view. People with religious beliefs are less prone to stress, depression, divorce, delinquency, and suicide [35]. Cancer patients often use their spiritual and religious beliefs as a way to gain meaning and hope during illness and recovery, as well as a way to cope with the concept of death. The most important special effect of spiritual therapy is to change the attitude and interpretation of the individual toward illness and life. The patient achieves a stronger sense of security through connection to God and spiritual resources, and his/her ability to adapt to the mental and physical problems caused by the disease increases more effectively. Spirituality has different interpretations in each religion among people. But what they have in common is the existence of God and adherence to moral principles-a belief that can break the string of despair like a sharp sword and open a new window for people in dark and painful days.

## Conclusion

Spiritual therapy is more effective than ACT in increasing the QoL and LE of cancer patients. However, both treatments increase the LE and QoL of cancer patients. Therefore, they can be used as supplementary treatment.

### Study limitations

Similar to other behavioral sciences, this study, was associated with limitations. Among the limitations of the present study, we can mention the self-report tool for data collection, which can lead to distortion and bias in response. Available sampling also forces us to be cautious in extending the results to other chronic patients. It is recommended to use structured interviews for data collection, probability or random sampling methods, and a larger research population in future research. It is also suggested that counseling centers, psychotherapists, and

hospitals use group and affordable therapies, such as third-wave therapies to further improve the psychological function of cancer patients. Therefore, the approach of spirituality and acceptance and commitment can be used as appropriate interventions to improve the ability of patients to adapt to the cancer crisis and reduce its psychological effects.

## Ethical Considerations

### Compliance with ethical guidelines

All ethical principles such as obtaining informed consent from the participants, protecting their confidentiality, and giving them the right to leave the study, considered in this study. Ethical approval was obtained from the Ethics Committee of the Islamic Azad University, Kermanshah Branch (Code: 140.260IR.kuMs.Rec).

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### Authors' contributions

Conceptualization and supervision: Mokhtar Arefi and Karim Afsharnia; Methodology: Hasan Amiri and Keykavoos Abdi; Data collection: Keykavoos abdi and Mokhtar Arefi; Funding acquisition and resources: Keykavoos Abdi; Investigation, writing original draft, review & editing: All authors.

### Conflict of interest

The authors declared no conflict of interest.

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