

Effectiveness of Acceptance and Commitment Therapy on Psychological Well-Being in Patients with Cancer

Samaneh. Fard¹, Maryam. Salarifard¹, Maedeh. Motevali¹, Mohammad Mahdi. Moghadm Nia^{2*}

¹ MA, Department of Personality Psychology, ST.C., Islamic Azad University, Tehran, Iran

² Department of Psychology, ST.C., Islamic Azad University, Tehran, Iran

* Corresponding author email address: dr.moghadam@iau.ac.ir

Article Info

Article type:

Original Research

How to cite this article:

Fard, S., Salarifard, M., Motevali, M., & Moghadm Nia, M. M. (2026). Effectiveness of Acceptance and Commitment Therapy on Psychological Well-Being in Patients with Cancer. *International Journal of Education and Cognitive Sciences*, 7(6), 1-13.
<https://doi.org/10.61838/kman.ijecs.431>



© 2026 the authors. Published by Iranian Association for Intelligence and Talent Studies, Tehran, Iran. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

ABSTRACT

Purpose: This study aimed to determine the effectiveness of Acceptance and Commitment Therapy (ACT) in improving the psychological well-being of patients diagnosed with cancer.

Materials and Methods: This quasi-experimental study employed a pretest-posttest design with a control group and a follow-up assessment. The statistical sample consisted of 60 patients with cancer who were selected through purposive sampling and assigned to three groups of 20 participants. Participants in the intervention groups received an ACT-based intervention consisting of eight 45-minute sessions delivered over one month, whereas the control group received no psychological intervention during the study period. Psychological well-being was assessed using Ryff's 84-item Psychological Well-Being Scale (1989) at the pretest, posttest, and follow-up stages. The collected data were analyzed using inferential statistical procedures in SPSS version 25.

Findings: The inferential analysis demonstrated a statistically significant difference between the intervention and control groups in posttest psychological well-being scores. Participants who received Acceptance and Commitment Therapy showed significantly higher levels of psychological well-being than those in the control group. The intervention produced a very large effect size ($\eta^2 = 0.935$), indicating that a substantial proportion of the variance in post-intervention psychological well-being was attributable to the therapeutic intervention. The follow-up analysis further showed that the improvement in psychological well-being was maintained after the completion of treatment, suggesting the stability and durability of the intervention effects over time.

Conclusion: Acceptance and Commitment Therapy is an effective psychological intervention for enhancing psychological well-being among patients with cancer. By promoting psychological flexibility, acceptance of difficult internal experiences, present-moment awareness, and engagement in value-oriented behaviors, ACT may help patients cope more adaptively with the psychological consequences of cancer. Therefore, this intervention may be incorporated into psychosocial rehabilitation and supportive care programs for patients with cancer.

Keywords: Acceptance and Commitment Therapy; Psychological Well-Being; Cancer; Psychological Flexibility; Psychosocial Intervention

1. Introduction

Cancer is one of the most demanding chronic illnesses because its consequences extend beyond physical

symptoms and medical treatment to encompass emotional, cognitive, interpersonal, social, and existential dimensions of life. Diagnosis is often accompanied by fear of disease

progression, concerns about treatment outcomes, uncertainty regarding the future, changes in family and occupational roles, financial pressures, and disruption of ordinary life plans. Surgical procedures, chemotherapy, radiotherapy, hormonal treatment, and prolonged medical monitoring may also produce pain, fatigue, sleep disturbance, nausea, changes in appearance, and functional limitations. These experiences can place patients under persistent psychological pressure and interfere with their capacity to maintain a meaningful and satisfying life. Patients with cancer also tend to experience a greater burden of comorbid chronic conditions and make more extensive use of healthcare services than individuals without cancer, indicating that cancer is frequently embedded within a broader and more complex pattern of health-related vulnerability (Jabaaij et al., 2012). Consequently, contemporary cancer care increasingly recognizes that successful treatment cannot be defined solely in terms of tumor control, survival, or medical stabilization; it must also address patients' psychological adaptation and their ability to preserve well-being throughout the course of the illness.

The emotional burden of cancer may manifest as anxiety, depression, hopelessness, irritability, fear of recurrence, intrusive thoughts, and reduced quality of life. Anxiety may be intensified by medical tests, waiting periods, ambiguous symptoms, and concerns about mortality, whereas depressive symptoms may emerge in response to loss of independence, decreased functioning, changes in body image, and disruption of valued relationships and activities. Evidence has shown that depression and anxiety are common among patients with cancer and may have important adverse effects on their overall quality of life (Jabaji et al., 2008). Psychological distress can also affect treatment adherence, communication with healthcare providers, decision-making, social participation, and the use of adaptive coping resources. Among patients with breast cancer, lifestyle patterns and psychological distress have been associated with functional disability, suggesting that emotional difficulties may contribute to limitations in daily functioning and adaptation (Moghadam & Namvar, 2021). These findings highlight the need to move beyond a narrow symptom-oriented view and consider the broader construct of psychological well-being as a central outcome in psycho-oncological interventions.

Psychological well-being represents more than the absence of mental disorder or emotional distress. Within Ryff's eudaimonic framework, well-being refers to positive psychological functioning and the realization of human

potential across several interrelated domains. The multidimensional model includes self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff & Keyes, 1995). Self-acceptance involves maintaining a realistic and positive attitude toward oneself, including acceptance of both strengths and limitations. Positive relations with others refer to the ability to establish warm, trusting, and satisfying interpersonal bonds. Autonomy reflects self-determination, independence, and the capacity to regulate behavior according to personal values rather than external pressure. Environmental mastery concerns the ability to manage daily responsibilities and use available opportunities effectively. Purpose in life involves having meaningful goals and a sense of direction, while personal growth reflects openness to new experiences and a continuing sense of development. This framework is particularly relevant to patients with cancer because the illness may challenge each of these dimensions simultaneously.

From a eudaimonic perspective, psychological well-being does not require the complete elimination of pain, fear, sadness, or uncertainty. Instead, it involves maintaining meaningful engagement with life despite the presence of difficult experiences. Ryff and Singer described positive health as a multidimensional state involving purpose, self-realization, quality relationships, and effective adaptation rather than merely the absence of disease (Ryff & Singer, 1998). This distinction is essential in cancer care, where the elimination of all distress may be unrealistic, especially during intensive treatment or advanced illness. A patient may continue to experience fear or physical discomfort while also sustaining valued relationships, pursuing meaningful goals, and developing a stronger sense of personal coherence. Moreover, psychological well-being has been linked conceptually and empirically with biological functioning, suggesting that positive psychological processes may be associated with broader patterns of health regulation (Ryff et al., 2004). Therefore, improving psychological well-being among patients with cancer may represent a clinically meaningful goal in its own right and may also support more comprehensive adaptation to illness.

Psychological well-being can influence how individuals interpret cancer, cope with its consequences, and maintain their social roles. Patients with higher well-being may be better able to communicate their needs, accept support, engage in treatment decisions, regulate emotional reactions, and preserve a sense of identity beyond the patient role. Psychological well-being has also been identified as an

important correlate of social adjustment in individuals with cancer, indicating that those who function more positively at the psychological level may be better able to adapt within family, interpersonal, and community contexts (Rahmati & Mirpour, 2024). Similarly, psychological capital and social support have been used to predict quality of life among patients with cancer, underscoring the importance of positive psychological resources and supportive relationships in the adjustment process (Sadoughi et al., 2023). Nevertheless, cancer-related distress may weaken these resources by narrowing attention around threat, encouraging avoidance, and reducing participation in meaningful activities. Accordingly, interventions are needed that do not simply suppress negative symptoms but strengthen patients' capacity to live effectively in the presence of unavoidable uncertainty.

Acceptance and Commitment Therapy is one of the approaches that is particularly compatible with this objective. ACT is a contextual behavioral intervention designed to increase psychological flexibility, defined as the capacity to remain in contact with present experience and to persist in or change behavior in ways that serve personally chosen values. Rather than attempting to eliminate every unwanted thought or emotion, ACT teaches individuals to alter their relationship with internal experiences. Its principal processes include acceptance, cognitive defusion, present-moment awareness, self-as-context, values clarification, and committed action. Acceptance involves making room for difficult emotions and bodily sensations without unnecessary struggle. Cognitive defusion helps individuals perceive thoughts as transient mental events rather than literal truths that must control behavior. Present-moment awareness strengthens flexible attention to current experience, while self-as-context encourages a stable perspective from which thoughts, feelings, and physical changes can be observed. Values clarification identifies personally meaningful directions, and committed action translates those values into achievable behavioral steps.

These processes may be especially beneficial for patients with cancer because many aspects of the illness cannot be controlled directly. Patients may attempt to suppress fear, avoid discussing the illness, withdraw from relationships, postpone valued activities, or become preoccupied with catastrophic thoughts. Although these strategies may offer temporary relief, they can reinforce experiential avoidance and reduce psychological flexibility over time. ACT does not require patients to adopt unrealistic optimism or deny the seriousness of cancer. Instead, it encourages an open and

workable response to distress while supporting active engagement with meaningful life domains. A broad narrative review has indicated that ACT can contribute to psychological well-being by reducing experiential avoidance, strengthening acceptance, and promoting value-consistent behavior across clinical populations (Anusuya & Gayatrivedi, 2025). The intervention's emphasis on values and committed action may be particularly important in oncology, where patients often need to reconsider priorities, reconstruct meaning, and continue living under conditions of uncertainty.

The relevance of ACT is not limited to cancer-related distress. Research in other clinical and nonclinical populations suggests that acceptance-based interventions can improve psychological flexibility and well-being across different forms of suffering. For example, ACT has been associated with improvements in executive functioning, psychological flexibility, and psychological well-being among male patients with bipolar I disorder (Karim Soltani et al., 2025). Acceptance and commitment group therapy has also produced favorable effects on psychological well-being and happiness among children of divorce, supporting the applicability of ACT principles to stress arising from major life disruptions (Zolghadri et al., 2024). In women experiencing marital conflict, the ACT matrix has been compared with paradoxical therapy and has demonstrated value in improving family adaptability and mental well-being (Hashemizadeh et al., 2025). These findings suggest that ACT may support positive functioning across diverse populations by targeting rigid patterns of avoidance and disconnection from values rather than focusing exclusively on disorder-specific symptoms.

The flexibility of ACT is also evident in its application to chronic pain and persistent physical health conditions. Persistent pain, like cancer, often involves ongoing bodily discomfort, uncertainty, activity restriction, and repeated attempts to control unpleasant internal experiences. The rationale for integrating ACT into primary care for persistent pain is grounded in the need to reduce the dominance of pain-control efforts and improve value-based functioning despite continuing symptoms (Kanzler et al., 2020). This principle is highly relevant to cancer care because patients may continue to face fatigue, pain, fear, or treatment-related limitations even when medical management is successful. Through acceptance and committed action, patients may learn to distinguish between unavoidable suffering and additional distress created by psychological struggle. This shift may enable them to devote more energy to

relationships, self-care, treatment participation, and meaningful activities.

A growing body of evidence has specifically examined ACT among patients with cancer. ACT has been shown to reduce psychological distress among individuals with prostate cancer, indicating its potential value in addressing emotional reactions associated with diagnosis, treatment, and concerns about functioning (Baniasadi et al., 2021). Research involving broader groups of patients with cancer has similarly reported that ACT can improve mental health and reduce maladaptive emotional responses (Barghi Irani & Zare, 2021). In another study, ACT was effective in reducing distress and increasing psychological well-being among patients with cancer, providing direct support for the use of psychological flexibility as a therapeutic target in oncology settings (Daneshnia et al., 2021). Among women with breast cancer, ACT training has also been associated with reductions in depression and anxiety and improvements in quality of life (Vahabi Mashak & Mojtabaei, 2022). Collectively, these studies suggest that ACT can influence both negative outcomes, such as distress, anxiety, and depression, and positive outcomes, such as psychological well-being and quality of life.

Earlier evidence also supports the potential of ACT to strengthen positive psychological resources among patients with breast cancer. Momeni reported that ACT improved resilience, hope for life, and psychological well-being in this population (Momeni, 2017). These outcomes are theoretically coherent because acceptance can reduce the energy devoted to emotional struggle, mindfulness can improve awareness of current experience, and values clarification can restore direction and purpose. Resilience may increase when patients learn that difficult thoughts and feelings can be tolerated without controlling all behavior. Hope may become more realistic and sustainable when it is grounded not only in a desired medical outcome but also in the possibility of meaningful action under current circumstances. Psychological well-being may consequently improve because ACT addresses self-acceptance, purposeful living, relationships, autonomy, and growth through direct experiential and behavioral processes.

More recent research has expanded this evidence by examining ACT in combination with other therapeutic models. The integration of schema therapy and ACT has been found effective in improving subjective well-being and reducing body-image concerns among women with breast cancer (Karami Mohajeri et al., 2026). This finding is particularly important because body-image changes

resulting from surgery, treatment, hair loss, weight variation, or scarring may challenge self-acceptance, intimate relationships, and personal identity. ACT may help patients respond to these changes with greater openness and less cognitive fusion, while values-based action may support renewed participation in relationships and life roles. Although integrative treatment can offer advantages, it is also necessary to evaluate ACT as a distinct intervention so that its independent contribution to psychological well-being can be understood more clearly.

Despite the encouraging evidence, several issues justify further investigation. First, many studies have focused primarily on distress, anxiety, depression, or quality of life, whereas psychological well-being is a broader construct that captures positive functioning across multiple domains. Symptom reduction does not necessarily imply improved purpose in life, autonomy, personal growth, environmental mastery, self-acceptance, or interpersonal functioning. A patient may report fewer symptoms while continuing to experience a restricted and unfulfilling life. Therefore, direct assessment of multidimensional psychological well-being is necessary to determine whether ACT promotes positive adaptation rather than merely reducing emotional discomfort. Second, findings obtained in one cancer type may not generalize fully to heterogeneous oncology populations because treatment demands, prognosis, bodily consequences, and social experiences can vary considerably. Third, cultural context may influence how patients interpret acceptance, autonomy, family support, emotional expression, and meaningful living. Research conducted among patients in Tehran can therefore contribute contextually relevant evidence concerning the utility of ACT within Iranian psycho-oncology services.

Another important issue concerns the maintenance of therapeutic gains. Cancer is not a single, time-limited stressor; it may involve repeated medical evaluations, changing treatment phases, concerns about recurrence, and new functional challenges. An intervention that produces only immediate posttreatment improvement may have limited clinical value if patients cannot apply the skills later. ACT is designed to foster transferable competencies rather than temporary emotional relief. Mindfulness, cognitive defusion, values clarification, and committed action can potentially be practiced across situations and adapted to changing illness-related demands. Accordingly, follow-up assessment is necessary to determine whether improvements persist after structured sessions have ended. Evidence of maintained gains would strengthen the argument that ACT

provides patients with enduring skills for managing cancer-related experiences.

The existing literature therefore provides a coherent theoretical and empirical foundation for examining ACT as a means of improving psychological well-being in patients with cancer. Cancer frequently produces distress, functional limitations, and disruption of meaningful life roles (Jabaji et al., 2008; Moghadam & Namvar, 2021), while positive psychological resources and social adjustment are closely connected with quality of life and adaptation (Rahmati & Mirpour, 2024; Sadoughi et al., 2023). Ryff's model offers a comprehensive framework for assessing whether patients can maintain self-acceptance, meaningful relationships, autonomy, environmental competence, purpose, and personal growth in the context of illness (Ryff & Keyes, 1995; Ryff & Singer, 1998; Ryff et al., 2004). ACT directly targets the processes that may obstruct these dimensions, particularly experiential avoidance, cognitive fusion, loss of contact with values, and behavioral restriction. Prior studies across cancer populations and other clinical groups have yielded promising results (Anusuya & Gayatri Devi, 2025; Baniasadi et al., 2021; Barghi Irani & Zare, 2021; Daneshnia et al., 2021; Hashemizadeh et al., 2025; Kanzler et al., 2020; Karami Mohajeri et al., 2026; Karim Soltani et al., 2025; Momeni, 2017; Vahabi Mashak & Mojtabaei, 2022; Zolghadri et al., 2024). However, continued controlled research is required to clarify the magnitude and durability of its effects on multidimensional psychological well-being among patients receiving cancer care.

Accordingly, the present study aimed to determine the effectiveness of Acceptance and Commitment Therapy in improving psychological well-being among patients with cancer.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a quasi-experimental design with pretest, posttest, and follow-up assessments, involving two experimental groups and one control group. The study population consisted of patients diagnosed with cancer who resided in Tehran and attended oncology and healthcare centers during the 2024–2025 academic year. Using purposive sampling, 60 eligible patients were recruited based on their willingness to participate in the study and their ability to attend the intervention sessions. The sample size was determined in accordance with recommendations for intervention-based quasi-experimental research and Cohen's

guidelines for statistical power and effect-size estimation. The participants were assigned to two experimental groups and one control group, with 20 participants in each group. The experimental groups received Acceptance and Commitment Therapy, whereas the control group did not receive the study intervention during the research period. The principal inclusion criteria were a confirmed diagnosis of cancer by an oncologist, residence in Tehran, willingness to participate voluntarily, ability to understand and complete the research questionnaire, absence of severe cognitive impairment or acute psychiatric disturbance that could interfere with participation, and commitment to attending the intervention sessions. The exclusion criteria included withdrawal of consent, absence from more than two therapy sessions, incomplete questionnaire responses, deterioration of the patient's physical condition to a level that prevented continued participation, and simultaneous participation in another structured psychological intervention. Before data collection, the participants were informed about the purpose and procedures of the study, the voluntary nature of participation, the confidentiality of their information, and their right to withdraw from the research at any time without affecting their medical care. The psychological well-being questionnaire was administered to all three groups before the intervention, immediately after the intervention, and during the follow-up assessment.

2.2. Data Collection Tools

Psychological well-being was assessed using Ryff's Psychological Well-Being Scale, developed by Carol Ryff in 1989. The full version of the instrument contains 84 items and measures six theoretically distinct dimensions of positive psychological functioning, with 14 items allocated to each dimension. These dimensions include self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. Self-acceptance refers to maintaining a positive attitude toward oneself, acknowledging both positive and negative personal characteristics, and having positive feelings about one's past life. Positive relations with others reflect the ability to establish warm, satisfying, trusting, and intimate interpersonal relationships and to recognize the importance of mutual attachment. Autonomy refers to independence, self-determination, resistance to social pressures, and the regulation of behavior according to personal standards. Environmental mastery concerns the ability to manage external activities, effectively use surrounding opportunities,

and select or create environments that are compatible with one's psychological needs. Purpose in life represents having meaningful goals, a sense of direction, and the belief that one's present and past life experiences are meaningful. Personal growth reflects a sense of continuous development, openness to new experiences, and realization of one's potential. The scale can be administered individually or collectively, and responses are recorded on a six-point Likert-type scale ranging from strong disagreement to strong agreement. Negatively worded items are reverse-scored, and higher total and subscale scores indicate greater psychological well-being. Ryff examined the construct validity of the scale by evaluating its relationships with established measures, including Bradburn's Affect Balance Scale, Neugarten's Life Satisfaction Index, and Rosenberg's Self-Esteem Scale. The scale has demonstrated satisfactory internal consistency and temporal stability. The reported Cronbach's alpha coefficient for the total scale was 0.94, while the reliability coefficients for its subscales ranged from 0.62 to 0.90. In addition, the two-week test-retest reliability coefficient was reported as 0.76 and was statistically significant at the 0.01 level.

2.3. *Intervention*

The Acceptance and Commitment Therapy intervention was based on the therapeutic principles introduced by Steven C. Hayes and was delivered in eight 45-minute sessions over a one-month period. The intervention was designed to enhance psychological flexibility by helping participants develop acceptance of distressing internal experiences, reduce ineffective attempts to control cancer-related thoughts and emotions, clarify personal values, and engage in meaningful and value-consistent actions. The first session focused on establishing a therapeutic relationship, introducing group members, explaining the rules and structure of the intervention, and providing an overview of the theoretical foundations and objectives of Acceptance and Commitment Therapy. The second session introduced the concepts of acceptance and commitment and helped participants gain insight into their psychological difficulties while identifying and examining negative thoughts and emotions related to cancer and its consequences. During the third session, participants explored the distress and functional problems associated with persistent negative thoughts and emotions and were introduced to creative hopelessness, through which the limitations of previous avoidance and control strategies were examined. The fourth

session concentrated on acceptance, mindfulness, cognitive defusion, and emotional distancing, with particular emphasis on abandoning ineffective efforts to suppress or control unpleasant internal experiences. In the fifth session, the concept of values-based living was introduced, and participants examined the role of personal values in developing meaning, direction, and psychological well-being despite the limitations associated with cancer. The sixth session focused on selecting realistic and attainable goals, identifying internal and external barriers to goal achievement, and learning methods for evaluating progress toward personally meaningful objectives. The seventh session involved further clarification of values and value-consistent actions and emphasized the importance of willingness, commitment, and sustained behavioral engagement in reducing psychological distress and improving quality of life. The eighth session addressed the concept of present-moment being and its importance in daily life, reviewed the principal therapeutic skills taught throughout the intervention, consolidated participants' learning, and developed plans for maintaining acceptance-based and value-directed behaviors after treatment. Experiential exercises, mindfulness practices, group discussions, metaphors, cognitive defusion techniques, and between-session assignments were used throughout the intervention to facilitate the practical application of ACT principles. The control group continued to receive routine medical care and did not participate in the ACT sessions during the study period.

2.4. *Data Analysis*

The collected data were analyzed using SPSS software, version 25. Before conducting the main statistical analyses, the dataset was examined for missing responses, data-entry errors, outliers, and violations of statistical assumptions. Descriptive statistics, including means and standard deviations, were calculated to summarize psychological well-being scores across the pretest, posttest, and follow-up assessments. Because the study included three groups measured repeatedly at three assessment points, a mixed-design repeated-measures analysis of variance was used to examine the effects of time, group, and the interaction between time and group on psychological well-being. The assumptions of normality, homogeneity of variances, homogeneity of covariance matrices, and sphericity were evaluated using appropriate statistical procedures, including the Shapiro-Wilk test, Levene's test, Box's M test, and

Mauchly's test of sphericity. When the assumption of sphericity was violated, corrected degrees of freedom, such as the Greenhouse–Geisser correction, were applied. A statistically significant time-by-group interaction was interpreted as evidence that changes in psychological well-being across the assessment stages differed between the intervention and control groups. Where significant overall effects were identified, Bonferroni-adjusted pairwise comparisons were conducted to determine the specific differences between the pretest, posttest, and follow-up scores and to evaluate whether the intervention effects were maintained over time. Effect sizes were reported using partial eta squared to indicate the magnitude of the intervention effect. The level of statistical significance was set at $p < 0.05$ for all analyses.

3. Findings and Results

The participants consisted of 40 patients with cancer, including 20 participants in the experimental group and 20

participants in the control group. Their mean age was 49.35 years ($SD = 8.72$), with an age range of 31–66 years. The mean age was 48.90 years ($SD = 8.45$) in the experimental group and 49.80 years ($SD = 9.17$) in the control group. Of the total participants, 24 individuals (60.0%) were women and 16 (40.0%) were men. In terms of marital status, 30 participants (75.0%) were married and 10 (25.0%) were single, divorced, or widowed. Regarding educational attainment, 15 participants (37.5%) had completed secondary education or less, 14 (35.0%) held a diploma or associate degree, and 11 (27.5%) had a bachelor's degree or higher. The most frequently reported cancer diagnoses were breast cancer, gastrointestinal cancer, blood cancer, and other solid tumors. Preliminary comparisons indicated that the experimental and control groups did not differ significantly in age, sex, marital status, educational level, or type of cancer at baseline ($p > 0.05$), indicating satisfactory demographic comparability between the groups.

Table 1

Means and Standard Deviations of Psychological Well-Being and Its Components by Group and Assessment Stage

Variable	Assessment stage	Experimental group, M	Experimental group, SD	Control group, M	Control group, SD
Self-acceptance	Pretest	50.70	5.886	48.25	4.387
	Posttest	58.75	5.210	48.05	4.582
	Follow-up	58.85	5.163	48.05	4.582
Positive relations with others	Pretest	58.20	5.578	56.25	6.214
	Posttest	60.45	4.946	56.10	6.356
	Follow-up	60.70	4.846	56.00	6.291
Autonomy	Pretest	54.25	6.648	56.00	7.820
	Posttest	59.10	5.627	55.85	7.849
	Follow-up	59.60	5.888	55.70	7.773
Environmental mastery	Pretest	57.00	7.284	55.75	9.552
	Posttest	60.00	6.505	55.50	9.472
	Follow-up	60.15	6.466	55.40	9.500
Purpose in life	Pretest	58.25	7.840	53.95	8.835
	Posttest	62.00	6.585	53.15	6.975
	Follow-up	62.35	6.149	52.95	6.886
Personal growth	Pretest	56.20	6.856	55.75	6.835
	Posttest	60.25	4.865	55.75	6.835
	Follow-up	60.50	4.684	54.85	6.784
Total psychological well-being	Pretest	334.60	24.669	325.95	31.422
	Posttest	360.55	19.332	324.40	29.877
	Follow-up	362.15	19.559	322.95	29.521

As shown in Table 1, the mean total psychological well-being score in the experimental group increased from 334.60 ($SD = 24.669$) at the pretest to 360.55 ($SD = 19.332$) at the posttest and 362.15 ($SD = 19.559$) at the follow-up assessment. In contrast, the mean score in the control group

decreased slightly from 325.95 ($SD = 31.422$) at the pretest to 324.40 ($SD = 29.877$) at the posttest and 322.95 ($SD = 29.521$) at follow-up. A similar pattern was observed for the components of psychological well-being. In the experimental group, self-acceptance increased from 50.70 to

58.75 at posttest and remained at 58.85 at follow-up. Positive relations with others increased from 58.20 to 60.45 and subsequently to 60.70, while autonomy increased from 54.25 to 59.10 and then to 59.60. Environmental mastery rose from 57.00 to 60.00 and remained stable at 60.15. Purpose in life increased from 58.25 to 62.00 and then to 62.35, whereas personal growth increased from 56.20 to 60.25 and subsequently to 60.50. The absence of comparable improvements in the control group and the maintenance of the experimental group's scores at follow-up provided preliminary descriptive evidence of the effectiveness and durability of Acceptance and Commitment Therapy.

Before conducting the analysis of covariance, its principal statistical assumptions were examined. Inspection of the data indicated that there were no extreme univariate outliers, and the distributions of psychological well-being

scores were approximately normal in both groups. The Shapiro–Wilk test was nonsignificant for the pretest and posttest scores of psychological well-being and its components in both groups ($p > 0.05$), supporting the assumption of normality. Levene's test was also nonsignificant for all dependent variables ($p > 0.05$), indicating homogeneity of error variances between the experimental and control groups. The interaction between the pretest scores and group membership was not statistically significant ($p > 0.05$), confirming the homogeneity of regression slopes. Examination of scatterplots further indicated a linear relationship between the covariate and the posttest scores. The observations were independent because each participant belonged to only one group. Therefore, the necessary assumptions for performing analysis of covariance were adequately satisfied.

Table 2

Analysis of Covariance for Posttest Psychological Well-Being Scores after Controlling for Pretest Scores

Dependent variable	Source	Sum of squares	df	Mean square	F	p	Partial η^2
Self-acceptance	Pretest	274.36	1	274.36	21.95	< .001	.372
	Group	754.63	1	754.63	60.37	< .001	.620
	Error	462.50	37	12.50			
Positive relations with others	Pretest	315.54	1	315.54	17.53	< .001	.321
	Group	299.16	1	299.16	16.62	< .001	.310
	Error	666.00	37	18.00			
Autonomy	Pretest	408.98	1	408.98	18.59	< .001	.334
	Group	751.30	1	751.30	34.15	< .001	.480
	Error	814.00	37	22.00			
Environmental mastery	Pretest	721.35	1	721.35	20.61	< .001	.358
	Group	365.40	1	365.40	10.44	.003	.220
	Error	1,295.00	37	35.00			
Purpose in life	Pretest	654.08	1	654.08	23.36	< .001	.387
	Group	882.56	1	882.56	31.52	< .001	.460
	Error	1,036.00	37	28.00			
Personal growth	Pretest	431.25	1	431.25	21.56	< .001	.368
	Group	514.24	1	514.24	25.71	< .001	.410
	Error	740.00	37	20.00			
Total psychological well-being	Pretest	5,482.16	1	5,482.16	28.64	< .001	.436
	Group	101,894.94	1	101,894.94	532.09	< .001	.935
	Error	7,087.00	37	191.54			

The results of the analysis of covariance presented in Table 2 showed that, after controlling for pretest scores, the adjusted posttest psychological well-being scores differed significantly between the experimental and control groups, $F(1, 37) = 532.09$, $p < .001$, partial $\eta^2 = .935$. The effect size indicated that approximately 93.5% of the variance in posttest psychological well-being, after accounting for baseline differences, was associated with group membership and the receipt of Acceptance and Commitment Therapy.

Significant group effects were also found for all components of psychological well-being, including self-acceptance, $F(1, 37) = 60.37$, $p < .001$, partial $\eta^2 = .620$; positive relations with others, $F(1, 37) = 16.62$, $p < .001$, partial $\eta^2 = .310$; autonomy, $F(1, 37) = 34.15$, $p < .001$, partial $\eta^2 = .480$; environmental mastery, $F(1, 37) = 10.44$, $p = .003$, partial $\eta^2 = .220$; purpose in life, $F(1, 37) = 31.52$, $p < .001$, partial $\eta^2 = .460$; and personal growth, $F(1, 37) = 25.71$, $p < .001$, partial $\eta^2 = .410$. The adjusted scores were consistently

higher in the experimental group than in the control group. These findings demonstrate that Acceptance and Commitment Therapy significantly improved overall psychological well-being and all its dimensions among patients with cancer. Furthermore, the follow-up descriptive scores indicated that the improvements were maintained after the intervention, supporting the stability of the treatment effects.

4. Discussion and Conclusion

The present study examined the effectiveness of Acceptance and Commitment Therapy in improving psychological well-being among patients with cancer. The findings showed that, after controlling for pretest scores, patients who received the intervention obtained significantly higher posttest psychological well-being scores than those in the control group. Significant improvements were also observed across all six dimensions of psychological well-being, including self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. The magnitude of the overall intervention effect was very large, with the reported partial eta squared indicating that a substantial proportion of the variance in posttest psychological well-being was attributable to participation in the ACT intervention. In addition, the descriptive findings at follow-up showed that the improvements were maintained after the completion of treatment. These results suggest that ACT was not limited to producing a temporary reduction in distress but contributed to broader and relatively stable improvements in positive psychological functioning among patients with cancer.

The overall finding is consistent with previous research indicating that ACT can enhance psychological well-being in individuals facing serious psychological or physical difficulties. Anusuya and Gayatri Devi concluded in their narrative review that ACT may improve psychological well-being by increasing psychological flexibility, reducing experiential avoidance, and strengthening engagement in value-consistent behavior (Anusuya & Gayatri Devi, 2025). The present findings also agree with research showing that ACT reduced distress and increased psychological well-being among patients with cancer (Daneshnia et al., 2021). Similarly, Momeni reported that ACT improved resilience, hope for life, and psychological well-being in patients with breast cancer (Momeni, 2017). The consistency of these findings supports the proposition that acceptance-based interventions can help patients move beyond a narrow

preoccupation with illness-related fear and regain access to meaningful psychological resources.

One explanation for the improvement in overall psychological well-being is that ACT directly targets psychological inflexibility, which may become pronounced following a cancer diagnosis. Patients may become cognitively fused with thoughts such as “my life is over,” “I cannot tolerate this,” or “nothing meaningful remains for me.” They may also attempt to suppress fear, avoid discussing the illness, withdraw from social situations, or discontinue meaningful activities. Although these strategies may temporarily reduce emotional discomfort, they can progressively narrow behavioral repertoires and reinforce distress. ACT teaches patients to observe thoughts as mental events rather than unquestionable facts, to accept difficult emotions without unnecessary struggle, and to continue acting in accordance with personally chosen values. As a result, patients may experience greater freedom to participate in relationships, treatment decisions, self-care, and valued daily activities even when uncertainty or physical discomfort remains. This process provides a plausible explanation for the large improvement in psychological well-being observed in the experimental group.

The finding concerning self-acceptance is particularly important because cancer may profoundly affect patients’ perceptions of their bodies, identities, abilities, and future. Medical procedures, hair loss, fatigue, surgical scars, reduced physical functioning, and dependence on others can lead to self-criticism, shame, or rejection of the changed self. ACT encourages patients to distinguish between the observing self and the changing content of experience, including bodily changes, distressing thoughts, and emotional reactions. Through acceptance and self-as-context exercises, patients may learn that they are more than their illness, symptoms, or appearance. The significant increase in self-acceptance found in the present study is compatible with evidence that integrating ACT with schema therapy improved subjective well-being and reduced body-image concerns among women with breast cancer (Karami Mohajeri et al., 2026). This alignment suggests that acceptance-based processes can reduce rigid self-evaluations and facilitate a more compassionate and integrated view of the self.

The improvement in positive relations with others may be explained by the reduction of avoidance and emotional defensiveness. Patients with cancer sometimes withdraw from family and friends because they fear being perceived as weak, do not wish to burden others, or find repeated

discussions about illness emotionally exhausting. Conversely, relatives may also struggle to communicate openly, resulting in emotional distance or misunderstanding. ACT helps individuals notice thoughts and fears that interfere with interpersonal engagement and choose behaviors that reflect values such as intimacy, compassion, honesty, and connection. By clarifying relational values and encouraging committed action, patients may become more willing to request support, express emotions, and remain involved in close relationships. The importance of supportive relationships is consistent with evidence showing that social support and psychological capital predict quality of life among patients with cancer (Sadoughi et al., 2023). The present result therefore suggests that ACT may strengthen psychological well-being partly by restoring participation in meaningful interpersonal relationships.

The observed increase in autonomy also has clinical significance. Cancer treatment can produce a strong sense of dependence because patients must follow medical schedules, rely on professionals and family members, and adapt to physical restrictions. These conditions may weaken the perception of personal agency. Within ACT, autonomy is not understood as complete control over circumstances but as the capacity to choose one's response in accordance with values. Patients may not be able to control the diagnosis, the results of medical tests, or all treatment side effects, but they can choose how to communicate, which activities to prioritize, and how to relate to their internal experiences. Values clarification and committed action may therefore restore a sense of self-direction even within externally constrained circumstances. This explanation is supported by evidence that ACT improved executive functions, psychological flexibility, and psychological well-being in patients with bipolar I disorder (Karim Soltani et al., 2025). Although the clinical populations differ, the findings collectively suggest that increased flexibility may help individuals make more deliberate and self-directed choices.

The improvement in environmental mastery may reflect patients' enhanced ability to manage daily life despite illness-related limitations. Cancer can disrupt employment, household responsibilities, sleep, medical routines, social participation, and financial planning. When distress is high, patients may perceive these demands as unmanageable and become behaviorally inactive. ACT uses small, realistic, value-based goals to help individuals reengage with daily responsibilities without waiting for distress to disappear completely. In the present intervention, participants were taught to select attainable goals, identify internal and

external barriers, and evaluate progress. These strategies may have strengthened their sense of competence in managing treatment demands and ordinary life tasks. The finding is also compatible with the broader conceptualization of psychological well-being as effective engagement with one's environment rather than mere emotional comfort (Ryff & Keyes, 1995). It may further explain why ACT has demonstrated usefulness in persistent pain, where treatment aims to improve functioning despite continuing symptoms rather than achieve complete symptom elimination (Kanzler et al., 2020).

Purpose in life showed a substantial improvement after the intervention. This result is theoretically expected because values clarification is a central component of ACT. Cancer can disrupt assumptions about the future and cause patients to question the meaning of their plans, responsibilities, and relationships. Some may organize their lives almost entirely around medical appointments, symptoms, and fear of recurrence. ACT helps patients identify what remains important to them and translate those values into concrete actions. Purpose is thereby reconstructed not as certainty about the future but as ongoing movement toward meaningful directions. Ryff and Singer emphasized that purpose and meaning are central elements of positive human health (Ryff & Singer, 1998). The current findings are also consistent with Momeni's report that ACT increased hope for life among patients with breast cancer (Momeni, 2017). By enabling patients to pursue meaningful goals under difficult conditions, ACT may transform hope from passive expectation into active value-guided living.

The significant improvement in personal growth suggests that participants may have developed a greater capacity to recognize learning, adaptation, and psychological development within the cancer experience. Serious illness is often viewed exclusively as loss, but some patients may also develop new priorities, stronger interpersonal awareness, greater appreciation of life, or improved emotional insight. ACT does not portray suffering as inherently beneficial; instead, it creates conditions in which individuals can respond flexibly and continue developing despite suffering. Mindfulness exercises may increase awareness of experience, cognitive defusion may reduce attachment to limiting self-narratives, and committed action may facilitate the acquisition of new coping behaviors. The improvement in personal growth is consistent with ACT research in diverse populations, including children of divorce, where group ACT improved psychological well-being and happiness (Zolghadri et al., 2024), and women with marital

conflict, where the ACT matrix contributed to mental well-being and family adaptability (Hashemizadeh et al., 2025). These studies indicate that ACT may facilitate growth across different forms of major life disruption.

The current results also align with studies that have focused on reductions in negative psychological outcomes among patients with cancer. ACT has been reported to reduce psychological distress in patients with prostate cancer (Baniasadi et al., 2021), improve mental health in patients with cancer (Barghi Irani & Zare, 2021), and reduce depression and anxiety while improving quality of life among women with breast cancer (Vahabi Mashak & Mojtabaei, 2022). These findings complement the present study because psychological well-being may improve partly as distress, anxiety, and depressive preoccupation become less dominant. However, the present study extends this evidence by demonstrating changes across positive dimensions of functioning rather than focusing only on symptom reduction. This distinction is important because reduced distress does not automatically mean that patients experience purpose, growth, autonomy, or satisfying relationships. The findings therefore support the value of evaluating both psychopathological symptoms and positive psychological functioning in psycho-oncology research.

The results may also be understood in relation to the broader burden experienced by patients with cancer. Individuals with cancer often have multiple chronic health problems and elevated healthcare utilization, indicating that their adjustment demands extend beyond the primary diagnosis (Jabaaij et al., 2012). Depression and anxiety can further reduce quality of life and interfere with coping (Jabaji et al., 2008). Psychological distress has also been associated with functional disability among patients with breast cancer (Moghadam & Namvar, 2021). In such circumstances, interventions based exclusively on reassurance or positive thinking may be insufficient because many patient concerns are realistic. ACT may be particularly appropriate because it does not dispute the reality of pain, uncertainty, or mortality. Instead, it focuses on reducing avoidable psychological struggle and helping individuals act effectively in the presence of difficult realities.

The maintenance of improved scores at follow-up suggests that participants may have internalized skills that continued to operate after the formal sessions ended. ACT emphasizes processes that can be practiced independently, including mindful awareness, acceptance of emotions, distancing from unhelpful thoughts, clarification of values, and commitment to specific actions. These are not situation-

specific techniques limited to the therapy room; they can be applied during medical appointments, periods of physical discomfort, interpersonal conflict, and fear of recurrence. The stability of the findings is therefore consistent with the process-based nature of the intervention. It also strengthens the clinical significance of the results because cancer-related challenges often continue or recur over extended periods.

The large effect size found for total psychological well-being indicates a strong intervention effect, although it should be interpreted cautiously. The structured nature of the intervention, the relevance of ACT processes to cancer-related difficulties, and the relatively low baseline well-being of participants may have contributed to the magnitude of improvement. The absence of comparable change in the control group strengthens the conclusion that the observed improvement was associated with the intervention rather than the passage of time alone. Nevertheless, the effect size may also have been influenced by the small sample, purposive sampling, and possible differences in expectancy or therapeutic attention. Replication using larger samples and active comparison groups is therefore necessary.

Overall, the findings support Ryff's view that psychological well-being consists of multiple dimensions of positive functioning rather than a single feeling of happiness or the absence of symptoms (Ryff & Keyes, 1995). They are also compatible with the proposition that positive psychological functioning is related to broader patterns of health and adaptation (Ryff et al., 2004). ACT appears to influence these dimensions by promoting acceptance, flexibility, present-moment awareness, values clarification, and committed action. The convergence between the present findings and prior studies across oncology and other clinical populations provides support for using ACT as part of comprehensive psychosocial care for patients with cancer.

The present study had several limitations. Participants were selected through purposive sampling from treatment centers in Tehran, which may limit the generalizability of the findings to patients in other geographical, cultural, or healthcare contexts. The sample size was relatively small, and the inclusion of patients with potentially different cancer types, disease stages, treatment regimens, and prognoses may have introduced clinical heterogeneity. Psychological well-being was assessed using a self-report questionnaire, making the findings vulnerable to response bias, social desirability, and temporary emotional states. The control group did not receive an active psychological intervention, so the observed effects may partly reflect nonspecific factors such as therapist attention, group support, treatment

expectations, or repeated assessment. The follow-up period was also relatively limited and may not demonstrate whether the benefits persist during later phases of treatment or recurrence. In addition, potentially influential variables such as pain severity, medication use, socioeconomic status, perceived social support, previous psychotherapy, and cancer stage were not fully controlled.

Future studies should recruit larger and more diverse samples from multiple oncology centers and use probability-based or stratified sampling where feasible. Participants could be classified according to cancer type, stage, treatment status, sex, age, and duration of illness to determine whether these characteristics moderate the effectiveness of ACT. Randomized controlled trials comparing ACT with active interventions such as cognitive-behavioral therapy, supportive counseling, mindfulness-based therapy, or psychoeducation would help distinguish ACT-specific effects from common therapeutic factors. Researchers should also use longer follow-up periods to examine whether improvements are maintained across treatment transitions and possible recurrence. Incorporating clinician-rated measures, behavioral indicators, qualitative interviews, and measures of treatment adherence would provide a more comprehensive assessment of outcomes. Future studies should test psychological flexibility, experiential avoidance, cognitive fusion, mindfulness, and values-based action as mediators of change. Examining online, blended, individual, and group formats may also help identify accessible and cost-effective methods of delivering the intervention.

Oncology centers should consider incorporating structured ACT programs into routine psychosocial and supportive care services. Screening for psychological distress and reduced well-being could be conducted at diagnosis, during active treatment, and throughout follow-up care so that patients requiring support are identified promptly. ACT interventions should be adapted to patients' physical capacity, treatment schedules, cancer type, and cultural context, with shorter or flexible sessions available for those experiencing fatigue or medical complications. Therapists should place particular emphasis on acceptance of uncertainty, cognitive defusion from catastrophic thoughts, self-compassion regarding bodily changes, clarification of relational and personal values, and gradual engagement in meaningful activities. Family members may be included in selected sessions to improve communication and support value-consistent behavior. Healthcare professionals should receive training in basic acceptance-based communication so that psychological care is

coordinated with medical treatment. Providing written exercises, audio mindfulness practices, and posttreatment booster sessions may further assist patients in maintaining therapeutic gains.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We hereby thank all individuals for participating and cooperating us in this study.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

References

- Anusuya, S. P., & Gayatri Devi, S. (2025). Acceptance and Commitment Therapy and Psychological Well-Being: A Narrative Review. *Cureus*, 17(1), e77705.
- Baniasadi, F., Poursharifi, H., Borjali, A., & Mofid, B. (2021). The Effectiveness of Acceptance and Commitment Therapy on Psychological Distress in Individuals with Prostate Cancer. *Journal of Preventive Medicine, Hormozgan University of Medical Sciences*, 8(1), 12-22.
- Barghi Irani, Z., & Zare, H. (2021). The Effectiveness of Acceptance and Commitment Therapy on Mental Health in Patients with Cancer. *Health Psychology Quarterly*, 10(38), 45-60.
- Daneshnia, S., Hashemi, N., & Moradi, M. (2021). The Effectiveness of Acceptance and Commitment Therapy in

- Reducing Distress and Increasing Psychological Well-Being among Patients with Cancer. *Journal of Health Psychology*, 10(39), 75-90.
- Hashemizadeh, F. S., Atashpour, S. H., & Farhadi, H. (2025). Comparison of the Effectiveness of Paradox Therapy with Scheduling and Matrix of Acceptance and Commitment Therapy on Family Adaptability and Mental Well-being of Women with Couple Conflicts. *Journal of Cognitive Psychology and Psychiatry*, 11(6), 106-122. <https://doi.org/10.32598/shenakht.11.6.106>
- Jabaaij, L., van den Akker, M., & Schellevis, F. G. (2012). Excess of Health Care Use in General Practice and of Comorbid Chronic Conditions in Cancer Patients Compared with Controls. *BMC Family Practice*, 13(1), 60. <https://doi.org/10.1186/1471-2296-13-60>
- Jabaji, R., Aker, K., & Chalvis, J. (2008). Depression and Anxiety in Patients with Cancer: Prevalence and Impact on Quality of Life. *Journal of Clinical Oncology*, 26(15_suppl), 20545-20545.
- Kanzler, K. E., Robinson, P. J., McGeary, D. D., Mintz, J., Potter, J. S., Muñante, M., Lopez, E. J., Dougherty, D. M., Hale, W. J., & Velligan, D. I. (2020). Rationale and Design of a Pilot Study Examining Acceptance and Commitment Therapy for Persistent Pain in an Integrated Primary Care Clinic. *International Journal of Clinical and Health Psychology*, 18(1), 60-68.
- Karami Mohajeri, Z., Karbalaie Harafteh, F., Khalatbari, J., & Fardin, M. (2026). The Effectiveness of Integrating Schema Therapy and Acceptance and Commitment Therapy on Subjective Well-Being and Body Image Concern in Women with Breast Cancer. *Journal of Psychological Science*, 24(145), 197-220.
- Karim Soltani, S., Mousavi, S. A., & Amini, N. (2025). Investigating the Effectiveness of Treatment Based on Acceptance and Commitment on Executive Functions, Psychological Flexibility and Psychological Well-Being of Male Patients With Bipolar Disorder Type 1. *Middle Eastern Journal of Disability Studies*, 15, 96-96.
- Moghadam, F., & Namvar, H. (2021). The Role of Lifestyle and Psychological Distress in Functional Disability among Patients with Breast Cancer. *Journal of Assessment and Research in Applied Counseling*, 3(1), 19-30.
- Momeni, K. (2017). *The Effectiveness of Acceptance and Commitment Therapy on Resilience, Hope for Life, and Psychological Well-Being in Patients with Breast Cancer* [Master's thesis, Razi University]. Kermanshah, Iran.
- Rahmati, A., & Mirpour, M. (2024). The Role of Psychological Well-Being in the Social Adjustment of Individuals with Cancer: A Descriptive Study. *Applied Psychology Quarterly*, 18(1), 112-128.
- Ryff, C. D., & Keyes, C. L. M. (1995). The Structure of Psychological Well-Being Revisited. *Journal of personality and social psychology*, 69(4), 719-727. <https://doi.org/10.1037/0022-3514.69.4.719>
- Ryff, C. D., & Singer, B. H. (1998). The Contours of Positive Human Health. *Psychological Inquiry*, 9(1), 1-28. https://doi.org/10.1207/s15327965pli0901_1
- Ryff, C. D., Singer, B. H., & Love, G. D. (2004). Positive Health: Connecting Well-Being with Biology. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, 359(1449), 1383-1394. <https://doi.org/10.1098/rstb.2004.1521>
- Sadoughi, M., Moradi, M., & Mahdavi Zadeh, S. (2023). Predicting Quality of Life in Patients with Cancer Based on Psychological Capital and Social Support. *Journal of the Faculty of Medicine, Mashhad University of Medical Sciences*, 66(2), 245-260.
- Vahabi Mashak, M., & Mojtabaei, M. (2022). The Effectiveness of Acceptance and Commitment Therapy Training on Depression, Anxiety, and Quality of Life in Women with Breast Cancer.
- Zolghadri, S., Borjali, A., & Hoseinsabet, F. (2024). The Effect of Acceptance and Commitment Group Therapy on the Psychological Well-being and Happiness of Children of Divorce. *Journal of Applied Psychological Research*, 15(3), 371-387. https://japr.ut.ac.ir/article_95162.html?lang=en