

ORIGINAL RESEARCH

Effectiveness of acceptance and commitment therapy on resilience and general health of cancer patients undergoing chemotherapy

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Abstract

Background & Objective: Cancer is a global concern, and the management of cancer patients dealing with various psychological symptoms is a growing concern. Acceptance and commitment therapy (ACT) is effective psychological management in cancer patients improving psychological symptoms. However, the effect of ACT on cancer patients' resilience and general health has not been widely studied. The present study aimed to evaluate the effect of ACT on the general health and resilience of cancer patients undergoing chemotherapy.

Materials and Methods: Sixty patients with breast, lung, or colorectal cancer enrolled in the present study and allocated into intervention and control groups. The Connor-Davidson Resilience Scale (CD-RISC) and General health questionnaire (GHQ) were filled as pretest and post-test after ACT as eight sessions (each session 9') during four weeks for the intervention group and after 4-weeks for the control group.

Results: The mean age of the participants was 35 ± 76.3 years, and the mean age, gender, cancer duration, duration of receiving chemotherapy, and marital status were not significantly different among the study groups. After adjusting for baseline scores, there was a significant difference in study groups in resilience and general health scores. The effects indicate that treatment accounted for 70.9% and 62.6% of the post-test covariance of resilience and general health scores, respectively.

Conclusion: ACT could be an effective psychological intervention in increasing general health and resilience among cancer patients.

Keywords: Resilience, Cancer, General health

Introduction

Cancer is a global health issue with a considerable global burden. Approximately 19.3 million new cancer cases and 10 million cancer deaths occurred in 2020. The global burden of cancer has been estimated to be 28.4 million cases by 2040, an almost 50% rise from the estimated burden in 2020 (1). Cancer incidence and its mortality rate in Iran are also rising, and cancer management is a national concern (2). Among different clinical complications of cancer, the patients also suffer from emotional difficulties, including depressive disorders (3). These complications are mostly because of the clinical side effects of cancer and its related treatments, including chemotherapy or radiotherapy, which both have adverse physical effects (3-5). Therefore, individuals with cancer face limited physical activities and daily social interactions (3, 6). Among various management strategies for managing emotional difficulties, acceptance and commitment therapy (ACT) is an effective treatment for managing physical pain, distress, and emotional disturbances (7, 8). ACT is based on an empirical psychological intervention using mindfulness and acceptance strategies mixed in different ways, increasing psychological flexibility (9). During the ACT, individuals learn to open up and not overreact to unpleasant feelings (9). While the effect of ACT on cancer patients' quality of life has been addressed in the literature, there is limited evidence regarding the effectiveness of ACT on resilience as an essential and neglected aspect of the psychological well-being of these patients (10). It has been demonstrated that cancer patients have decreased resilience, and increasing the resilience results in better management of psychological difficulties, including emotional distress (7). Therefore, we aimed to evaluate the effect of ACT on the general health and resilience of cancer patients undergoing chemotherapy.

Materials and Methods

Study design: The present single-group pre-test-posttest designed study took place in the chemotherapy ward of Shahid Sadoughi Hospital (Yazd, Iran). Shahid Sadoughi

University approved the study protocol approved the present cross-sectional study of the Medical Sciences Ethics Committee.

Study population: Patients admitted for chemotherapy of any cancer were evaluated for the inclusion criteria if they agreed to participate in the study. The inclusion criteria were as follow: (I) not having any underlying medical diseases except the malignancy; (II) aged between 18 and 55 years; (III) not receiving any medication except anti-cancer regimens; (IV) not having any previously diagnosed psychiatric illness. The study participants meeting the inclusion criteria entered the study after filling an informed consent form. During the study period, any participants who did not wish to continue the study or did not complete the follow-up visits were excluded from the study. The study participants were divided into two equal groups as intervention and a control group by random sampling.

Intervention: The intervention group received two ACT sessions per week for four weeks. An expert psychiatrist provides ACT sessions, and each session lasts 90 minutes. The control group did not receive any ACT sessions. The individuals in both groups filled Connor-Davidson Resilience Scale (CD-RISC) and General health questionnaire (GHQ) two times as pretest and post-test after four weeks.

Study instruments: The study used the Connor-Davidson Resilience Scale (CD-RISC) and the General health questionnaire (GHQ).

The CD-RISC is a widely used questionnaire for assessing resilience (12). The Persian version of CD-RISC has been validated on adolescents with cancer (13). The questionnaire has 24 items and five subscales (13). The internal consistency of the questionnaire was 0.82, and the test re-test score was 0.40 (13). The GHQ has 28 items evaluating four public health domains, including anxiety symptoms, depression symptoms, somatic symptoms, and social dysfunction. This self-report screening tool provides five scores, 4 for the four general health domains and one as a total score. The GHQ scoring system is as follows for the total score: 1) Severe symptoms: 61-84; 2) moderate symptoms: 41-60; 3) mild symptoms: 23-40; and 4) no or least symptoms: 0-22. The Persian version of GHQ-

28 has been validated on the adult population with an internal consistency of 0.90 (14).

Statistical analysis

Data analysis was made using the statistical package for social sciences (SPSS) software version 16. The normality of the continuous variables was assessed using the Shapiro-Wilk test. Comparison of the post-test resilience and general health scores between intervention and control groups was performed using the analysis of covariance with baseline score as the covariant. The level of statistical significance was considered as $p < 0.05$.

Results

Sixty subjects with had breast, lung, or colorectal cancer participated in the present study. The mean age of the participants was 35 ± 76.3 years, and most of the patients were male (56.6%). The mean age, gender, cancer duration, duration of receiving chemotherapy, and marital status were not significantly different among the study groups. The mean scores for resilience and general health at pretest and post-test are shown in Table 1.

Table 1. The mean and standard deviation of resilience scores among study groups.

			Number of patients	Minimum	Maximum	Mean $\pm$ SD
CD-RISC	Intervention group	Pre-test	15	22	63	44.13 $\pm$ 12.99
		Post-test	15	40	75	56.93 $\pm$ 11.55
	Control group	Pre-test	15	19	64	36.67 $\pm$ 11.45
		Post-test	15	20	65	36.73 $\pm$ 11.70
GHQ	Intervention group	Pre-test	15	63	86	74.47 $\pm$ 7.72
		Post-test	15	55	75	63.67 $\pm$ 6.78
	Control group	Pre-test	15	69	94	79.33 $\pm$ 7.95
		Post-test	15	67	90	78.53 $\pm$ 7.67

In order to compare the effect of treatment on resilience and general health scores, the ANCOVA test was used in Table 2.

Table 2. Comparison of resilience and general health scores between groups after adjusting for baseline scores

Variable	Sum of squares	Df	F	P	Effect size
Resilience	1264.528	1	65.829	0.0001*	0.709
General health	859.394	1	45.100	0.0001*	0.629

Df: degree of freedom

*Comparison was made based on the analysis of covariance (ANCOVA)

Based on the findings of ANCOVA, there was a significant difference in resilience ($p=0.0001$) and general health ($p=0.0001$) scores between intervention and control groups after adjusting for baseline scores. The effects sizes indicate that treatment accounted for 70.9% and 62.6% of the post-test score covariance of resilience and general health scores, respectively. Changes in resilience and

general health over the study period are presented in Figure 1.

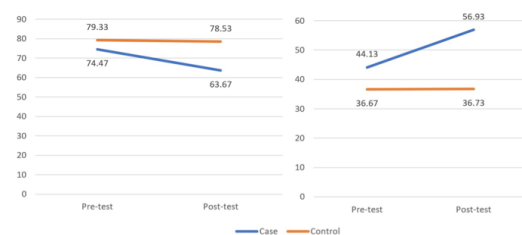


Figure 1. Changes in resilience score during the study period as per study groups (Right) and general health score during the study period as per study groups (left).

Discussion

The present study demonstrated that ACT positively affects cancer patients' resilience and general health. It has been demonstrated that cancer patients experience anxiety and depression as the primary psychological problems, therefore paying particular attention to patients dealing with such problems will increase their quality of life (15). Ghasemi et al. study evaluated the effect of eight ACT sessions on breast cancer patients and demonstrated that ACT could create hope in these patients (16). The authors concluded that ACT is the safe way for increasing hope by decreasing anxiety and depression (16). Their finding aligns with Faryabi et al.'s study on leukemic patients demonstrating that ACT can effectively reduce anxiety and stress (17).

Moreover, Faryabi et al.'s study demonstrated that ACT could effectively increase pain coping strategies and reduce psychological problems in these patients (17). While the effect of ACT on specific symptoms, including psychological distress, emotional disturbances, and traumatic responses, are addressed in the literature, some other symptoms, including resilience, are not widely studied (8). The effect of psychotherapy based on acceptance and commitment on breast cancer patients' quality of life and mental health has been previously studied (18). Similar to our study, the effectiveness of ACT on improving the total score of GHQ was reported on a smaller population with breast cancer with eight sessions (9') for four weeks (18). Our result demonstrated that ACT is an effective psychological intervention for improving the GHQ scores in breast, lung, or colorectal cancer patients.

Moreover, we demonstrated that ACT improves the CD-RISC score as an indicator of resilience. It has been demonstrated that improving resilience either by pharmacological or psychological interventions is critical in cancer care (19). Cancer history significantly affects a patient's quality of life, and it has been reported that cancer has a negative impact on resilience. Olivia et al. study on 293 women with or without cancer revealed that women with high resilience who had a history of gynecological cancer had a better quality of life than those with lesser resilience (20). Our study approved previous findings regarding the effectiveness of ACT on increasing resilience in the Iranian population without cancer (21). Farahi et al. study evaluated the effect of ACT on life expectancy, death anxiety, and resilience of women with cancer (22). Similar to our study, they used the CD-RISC and life expectancy scale and Templer death anxiety questionnaire. They revealed that increased cognitive flexibility increases life expectancy and

resilience and decreases death anxiety among women (22). Similar to our study, another study evaluated the effect of ACT on Chinese breast cancer patients by CD-RISC and demonstrated that ACT improves resilience (23). Moreover, similar to the previous study only on breast cancer patients who demonstrated the effectiveness of ACT on improving the quality of life and resilience on smaller populations, our study demonstrated that ACT is a practical approach to improving the resilience in patients with cancer (24). Our study demonstrated that ACT is a practical approach in increasing cancer patients' resilience and general health, and this psychotherapy approach could be considered in managing these patients.

Conflict of interest

Author declares no conflict of interest.

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