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Effects of Cognitive-Behavioral Group Therapy on Increased Life Expectancy of Male Patients with Gastric Cancer

E. Mohammadian Akerdi (PhD Student) [1], P. Asgari (PhD)*[2], R. Hassanzadeh (PhD)[3], H. Ahadi (PhD)[4], F. Naderi(PhD)[5]

1.PhD Student in General Psychology, Department of Psychology, Ahvaz Branch, Islamic Azad University, Ahvaz, I.R.Iran
2.Associate Professor, Department of Psycology, Ahvaz Branch, Islamic Azad University, Ahvaz, I.R.Iran
3.Associate Professor, Department of Psychology, Sari Branch, Islamic Azad Univercity, Sari, I.R.Iran
4.Professor, Department of Psychology, Karaj Branch, Islamic Azad University, Karaj, I.R.Iran
5.Associate Professor, Department of Psychology, Ahvaz Branch, Islamic Azad University, Ahvaz, I.R.Iran

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ABSTRACT

BACKGROUND AND OBJECTIVE: Cancers are a broad group of diseases, each having their own etiology, treatment, and prognosis. The majority of cancer patients experience a period of mental stress during their disease. Given the effective role of life expectancy in dealing with chronic diseases, such as stomach cancer, this study aimed to evaluate the effects of cognitive-behavioral group therapy on increased life expectancy of male patients with gastric cancer.

METHODS: This quasi-experiment was conducted on 92 male patients with gastric cancer referring to Tuba Medical Center, Sari, Iran in 2014. Patients were randomly divided into two groups of test (n=46) and control (n=46). The two groups completed the Adult Hope Scale (AHS) by Snyder in pretest stage. At the next stage, samples of the test group were exposed to 10 sessions of cognitive-behavioral group therapy (each session: 90 min), while the control group did not receive any special treatment. Both study groups completed the questionnaire again at the posttest stage, followed by the comparison of results.

FINDINGS: In terms of life expectancy, mean scores of the test and control groups at the pretest stage were 37.21±4.7 and 36.26±4.73, respectively. Meanwhile, mean scores of the mentioned groups at the posttest stage were 40.02±3.87 and 36.23±4.8, respectively. A significant increase was observed in the mean scores of test and control groups at the posttest stage compared to before the intervention. Moreover, a significant difference was found between the study groups regarding life expectancy and its components ($p<0.01$).

CONCLUSION: According to the results, cognitive-behavioral group therapy could increase life expectancy in patients with gastric cancer.

KEY WORDS: *Cognitive-behavioral therapy, Life expectancy, Cancer*.

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***Corresponding author: P. Asgari (PhD)**
Address: Department of Psycology, Islamic Azad University, Ahvaz Branch, Ahvaz, I.R.Iran
Tel: +98 61 53364722
E-mail: P.askary@iauahvaz.ac.ir

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Introduction

Cancers are a broad group of diseases, each having their own etiology, treatment, and prognosis. The majority of cancer patients experience a period of mental stress, which might recede in some cases without long-term psychological problems. Although this issue is regarded as a natural adaptive response, some patients experience more severe psychological problems, which adversely affect their daily functioning and quality of life (QOL) (1). Gastric cancer is one of the most common malignancies worldwide. This cancer is developed by a multi-stage progression in cancerous tissues in the stomach and could be categorized as multifactorial diseases. This classification might be due to the development of cancer by infectious, genetic, and environmental agents in patients (2).

Gastric cancer is the fourth most common cancer and the second leading cause of cancer-related deaths in the world. According to global estimates, more than 930,000 new cases of stomach cancer are diagnosed annually, and the mortality rate of this severe health problem is reported to be 700,000 cases (3). Gastric cancer is the third cause of mortality among Iranians, as well as the first and second leading cause of cancer-related deaths in men and women, respectively.

This disease has moderately increased during the past 30 years in Iran and its incidence has doubled in 2002, compared to the past 30 years. While the prevalence of esophageal and gastric cancers has escalated in Iranians residing in Canada, The incidence rate of the latter is particularly high in northern and northwestern regions in Iran (4). Cancer-related crises lead to imbalance or dissonance between mind, body, and soul. However, the most prevalent feeling in cancer patients is a sense of despair and frustration. Several studies have been devoted to the evaluation of hope in the past two decades. Hope enables individuals to design targets and follow them. This notion is the perceived ability of the optimal routes to achieve life goals and motivation to exploit these routes. Hope is also known as a mind-set based on mutual sense of determination and plan to reach a specific goal (5).

Hope includes two dimensions of strategic and operational thinking. People need to be sure about their ability to create practical paths used to achieve a goal. Strategic thinking means the perceived ability of an individual to produce practical ways to achieve goals (6). According to the literature, hope could enable patients to develop coping strategies when faced with problems or even terminal diseases. In addition, this concept might be identified as a healing, multidimensional, dynamic, and powerful agent with a significant role in coping with loss (5). To date, implementation of psychological interventions has increased for cancer patients due to the psychological structure of hope. One of the most important psychological interventions is cognitive-behavioral therapy (CBT). This approach is a combination of behavioral therapy and cognitive approach, established in the context of Pavlovian conditioning and based on knowledge and understanding, respectively.

In the past two decades, a majority of researchers and psychologists used the CBT approach to teach individuals how to cope with life (7). Results obtained by White (8) revealed that cognitive-behavioral group therapy had a significant effect on reduced level of anxiety and depression in patients with breast cancer. Moreover, Nikyar et al. (9) indicated that CBT led to reduced depression symptoms and elevated hope in patients. In a study by Omrani et al. (10), it was concluded that mean life expectancy was significantly increased in the test group at the posttest and follow-up stages compared to the control group.

In another research by Khodaei et al. (5), it was demonstrated that the depression rate of samples was significantly decreased in the test group after treatment, while it was the same in the control group after intervention. Pedram et al. (1) concluded that group therapy resulted in a significant reduction in the rates of depression and anxiety, as well as elevated hope in the test group; however, no such change was observed in the control group.

Literature review revealed that some of the previous studies have evaluated the role of CBT in the improvement of life expectancy in diverse chronic diseases, such as cancer. Nevertheless, only a few studies have assessed the effect of CBT on improved life expectancy in patients with gastric cancer, especially in men. Given the undoubtable role of hope in various stages of cancer treatment, and considering the increased incidence rate of gastric cancer, this study aimed to evaluate the effects of CBT on life expectancy in patients with gastric cancer.

Methods

This quasi-experiment (with a pretest-posttest design and a control group) was conducted on all male patients aged 25-48 years suffering from gastric cancer

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(from 6 months to 2 years) referring to Tuba Medical Center, Sari, Iran in 2014. In total, 126 patients were recognized, 100 of which were selected via random sampling and divided into two groups of test and control (N=50 each group). Eventually, 46 subjects were allocated to each study group due to the lack of cooperation and absence of some of the subjects. Since the test group included a large number of samples, it was divided into three sub-groups (two groups of 15 and one group of 16). After that, 10 90-min sessions of CBT intervention were conducted for the samples.

Intervention sessions were carried out as follows: 1) meeting and greeting with the participants, 2) motivating the subjects, 3) overviewing the structure of meetings and basic rules, 4) creating a strong therapeutic relationship through empathy and active listening, 5) familiarizing the patients with anxiety, 6) introducing the benefits of CBT, 7) recognizing the negative automatic thoughts, 8) describing cognitive schema and triangle, 9) discussing negative errors of and relationship between thoughts, 10) acknowledging feeling and behavior, as well as verbal challenges, 11) demonstrating the vertical arrow technique, 12) considering a revision in beliefs and negative attitudes, 13) substituting negative thoughts with positive, 14) teaching how to use muscle relaxation techniques and visualize calming environments, 15) creating a positive mental pattern in the participants and 16) preparing for the end of treatment. It should be noted that the Adult Hope Scale (AHS) by Snyder, et al. was used in this study as a research tool. This 12-item scale could be used for individuals aged 15 years and over, and each item is scored within a range of 1-4 (1: Definitely False, 2: Mostly False, 3: Mostly True, 4: Definitely True). In this scale, negative sentences are scored conversely, and total hope scale scores range from a minimum of 12 to a maximum of 48 with high scores reflecting high levels of hope. In addition, this scale includes two subscales of pathways and agency. The internal consistency of the test was estimated at 0.74-0.84, while its reliability was confirmed at 0.80; however, this rate could be higher in longer durations (more than 8-10 weeks) (13).

Moreover, reliability calculated with the alpha of Cronbach presented the correlation coefficient values of 0.62 and 0.74 for the total scale. Data analysis was performed using descriptive and inferential statistics, with the latter (ANCOVA) being applied in descriptive statistics analysis (mean, variance, standard deviation) in order to confirm or reject the research hypotheses.

Results

In a total of 92 samples, 16 subjects from the test group and 18 samples from the control group, who completed the AHS scale, had Bachelor's degree. In terms of age, the majority of participants aged 30-35 years (test group: 18, control group: 17), and most of them were suffering from this disease for 15-20 months at the time of intervention (test and control groups: 19). In terms of life expectancy, mean pretest scores of the test and control groups were 36.26±4.73 and 37.21±4.7, respectively; meanwhile, mean posttest scores of the mentioned groups were 36.23±4.8 and 40.02±3.87, respectively (table 1).

F-value calculated to evaluate the differences between the groups in terms of posttest scores was equal to 16.7 by including the pretest scores on the hope scale ($p<0.01$). In operational and strategic thinking subcomponents, F-values were reported to be 10.7 and 19.8, respectively ($p<0.01$). It could be expressed that cognitive-behavioral group therapy significantly increased life expectancy of male cancer patients (Confidence Interval: 0.99).

Table 1. Mean scores of the study groups

Groups		Stages	Mean±SD
Life expectancy	Control	Pretest	32.26±4.73
		Posttest	36.23±4.8
	test	Pretest	37.21±4.8
		Posttest	40.02±3.87

Discussion

The results of the present study were indicative of the effectiveness of cognitive-behavioral group therapy in increasing the life expectancy of male cancer patients. The results of the current research were in line with the findings obtained by Khaledian et al. (12), Nikyar et al. (9), Laresna et al. (13) and Hinds et al. (14) regarding the effectiveness of cognitive-behavioral group therapy in increasing hope and life expectancy in patients.

Cancer patients, who suppress their feelings about their condition become estranged and avoid new experiences. Instead, they focus on pessimistic thoughts, boredom, frustration, loneliness, and fear of death. It seems that participating in psychotherapy sessions, acquiring visualization techniques to envision death, and changing one's attitude towards death in groups allowed patients to consider new perspectives and ideas in life. In the present study, it was demonstrated that cognitive-behavioral group therapy

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had a significant effect on increased life expectancy of male patients with gastric cancer. Due to the feelings of despair and frustration, as well as mental problems in patients with chronic diseases, it seems necessary to conduct psychotherapy sessions for such patients to deal with possible problems. Therapists, who plan their work on the main elements of CBT, more easily can tailor treatment interventions based on the problems of patients. CBT approach encourages therapists and patients to work together as a scientific team, which could be seen in the attempt of these people to keep an open mind when considering the potential role of knowledge and behaviors in creating the current problems. A significant association was observed between CBT and participatory nature of the relationship between patient and therapist, as well as focusing on a set of skills to treat mental health problems (15). Therefore, it could be concluded that cognitive-behavioral group therapy, while relying on cognitive strategies to overcome pessimistic thoughts and training for diminishing ineffective behaviors and cognition, could significantly improve the life expectancy of male patients with gastric cancer.

The main limitations of this study were the gender of the participants, the small size of study groups, limited time and space for therapeutic intervention, inability to follow up the patients, lack of control over variables (e.g., social status), marital and family satisfaction and social support, and the effect of media education. It is recommended that further studies be carried out on greater sample sizes to achieve more accurate and specific results.

Conduction of similar studies in various regions of the country could lead to better judgment regarding the effectiveness of this method. Awareness of the available and accessible resources about the topic under study improves research. It is suggested that families be trained by psychologists so that cancer is taken seriously and new cancer treatment approaches are recognized. Moreover, it is recommended that the efficacy of this intervention be compared with other medical or psychological interventions, its effects on other variables be assessed, and mental conditions of the families of the participants be evaluated prior to study.

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