

## THE EFFECTIVENESS OF COGNITIVE-BEHAVIORAL THERAPY IN INCREASING POSITIVE THINKING AMONG PATIENTS WITH STOMACH CANCER

Ebrahim Mohammadian Akerdi<sup>1</sup>, Hoda Babaei Kafaki<sup>2\*</sup>, Fahimeh Akbari<sup>3</sup>, Abbas Rezaei<sup>4</sup>, Farhang Fereidouni<sup>5</sup>, Elahe Ghorbani<sup>6</sup>

<sup>1</sup> Instructor, Psychology Group, Islamic Azad University Sari Branch, Sari, IRAN, syavashmohammadian@yahoo.com

<sup>2</sup> Young Researchers and Elite Club, Sari Branch, Islamic Azad University, Sari, IRAN, hodabk@yahoo.com

<sup>3</sup> M.A. in Clinical Psychology, Islamic Azad University Science and Research Branch, Sari, IRAN, Fahimeh464@gmail.com

<sup>4</sup> Manager of Research and Technology, Islamic Azad University Sari Branch, Sari, IRAN a.rezaei1353sari@gmail.com

<sup>5</sup> M.A. Student In General Psychology, Islamic Azad University Sari Branch, Sari, IRAN, farhangfi@yahoo.com

<sup>6</sup> Instructor, Psychology Group, Payam Noor University, Tehran, IRAN, elahe\_gh64@yahoo.com

\*Corresponding Author

### Abstract

The purpose of this study was to examine the effectiveness of cognitive-behavioral therapy (CBT) in increasing positive thinking among male patients with stomach cancer. The design of this study was quasi-experimental. The sample population of this study consisted of all the male patients with stomach cancer, between 25-48 years old who referred to Toba Medical Center in Sari in 2014. Through random sampling, 92 patients were chosen and were divided into two groups of experimental and control (each consisted of 46 patients). The patients in experimental group received 10 sessions (each session was 90 minutes) of CBT training. The instruments used in this study were Ingram and Whysniky test of positive thinking. After conducting surveys, data analysis was both descriptive and inferential. According to the data resulting from the posttest, there was a significant difference between control and experimental groups. The results of this study showed that positive thinking of male patients with stomach cancer increased through training.

**Keywords:** cognitive-behavioral therapy, positive thinking, stomach cancer.

### 1 INTRODUCTION

Cancers are a wide range of diseases that each of them has its own etiology, treatment and prognosis. Most people who are diagnosed with cancer, experience an intense period of stress. In some of the patients, this stress disappears spontaneously and does not lead to lasting psychological problems and it can be considered as a natural adjustment reaction. On the other hand, some patients experience severe

psychological problems that reduce their quality of life and daily performance (Pedram et al., 2010). Stomach cancer is one of the most common malignant cancers around the world. This cancer is caused by cancer cells in stomach and is multi-stage. It is classified within the group of multifactorial diseases and is caused by the presence of infectious, genetic and environmental agents (Zabalta, 2012). According to the statistics provided in 2005, most cases of this cancer were in Japan, China and Russia; On the other hand, the least cases were in western developed countries (Inoue and Tsugane, 2005).

Stomach cancer has been the third cause of death among Iranians, the first cause of death from cancer in men and the second cause of death from cancer in women. This cancer had a mild to moderate increase in the past 30 years and has increased 2 times while among Iranians living in Canada, the incidence of esophageal and stomach cancer has been decreased. The incidence of this cancer is particularly high in northern and northwestern Iran (Rahimi and Heidari, 2011).

From the perspective of behavioral science and psychology, psychological and physical conditions, as well as pain or joy, stem from our mental and intellectual style. As we think healthier and in a more beautiful manner, we make our life wider, deeper and more enjoyable; this is our way of thinking that determines the quality of our life (Seligman, 1996). Nowadays, the positive psychology, as a new branch of psychology, essentially pays attention to the scientific study of human strength and joys. Happiness and pleasure as positive emotions can solve daily life problems through creativity. Psychological phenomena such as happiness, optimism, hope, creativity and wisdom that are resulted from the positive experiences of the mind are at the center of attention and studies of positive psychology (Kar, 2006). From two decades ago, there are some evidence to support this assumption that positive emotions broaden the pool of spontaneous thoughts and individual's action was proposed by Ayzenk (2000). Studies have shown that the positive emotions facilitate manners and continuity of operations. In these studies, researchers found that experiencing positive emotions, disposes people to engage with their surrounding environment (Fredrickson, 2003). Another study by Moradi et al. (2005) states that happiness is related to cognitive dimensions, internal control and optimism. Derryberry and Tucker (1994) indicated that positive emotion increases attention while negative feelings like anxiety depression and failure propose little and limited attention.

The crisis caused by cancer leads to the lack of balanced and coordination of mind, body and spirit, but the dominant state in this period is the state of despair and hopelessness. Hope is considered as one of the most important strategies of human while dealing with incurable illnesses and can be characterized as a healer, multidimensional, dynamic and powerful agent and finally, has an important role in dealing with loss (Harper, 2004). Due to this fact that hope is a psychological construct, the use of psychological interventions for patients with cancer has been increased. One of the most famous cases of these interventions is CBT. This approach is a combination of behavioral therapy and cognitive approach that is based on knowledge and cognition and has been planned in the context of Pavlov's classical conditioning. In the past two decades, many researchers and psychologists are using CBT approach in order to teach people how to deal with life (Nikyar et al., 2013). In a study by Fekri et al. (2007), the effectiveness of CBT on anxiety and life expectancy of patients with breast cancer was examined. According to the results of this study, this approach is effective in decreasing anxiety and increasing life expectancy of women with breast cancer. In a study by Behzadipour et al. (2013), the effectiveness of CBT on the quality of life and coping strategies in women with breast cancer was examined. The results of this study indicated a significant difference between experimental and control groups in the case of all aspects of life quality and coping strategies. Khodaei et al. (2001) examined the effectiveness of CBT on depression of patients with cancer. According to the results, the rate of depression of patients in experimental group decreased while those in control group did not show any change. Pedram et al. (2010) examined the effectiveness of CBT on the treatment of depression, anxiety and creating life expectancy in women with breast cancer. The results of this study showed a significant difference between control and experimental groups and it was shown that the treatment in experimental group has been effective in decreasing depression, anxiety and increasing life expectancy.

Given the importance of the survival of patients with cancer, its direct impact on society, having a healthy society and clarifying the role of hope and optimism in various stages of cancer and finally, its increasing prevalence, conducting this study is essential and effective.

## 2 METHODOLOGY

The design of this study is quasi-experimental, with control and experimental groups. The sample population of this study consisted of all the male patients with stomach cancer, between 25-48 years old who referred to Toba Medical Center in Sari in 2014. The number of these individuals was 100 and through random sampling, 100 patients were chosen and divided into two groups of control and experimental (each consisted

of 50 patients). Finally, due to the lack of cooperation and the absence of some of them, 2 groups of 46 patients were formed and functioned as control and experimental groups. The instruments used in this study were Ingram and Whysniky test of positive thinking.

Test of positive thinking: this test consists of 30 questions, each including 5 options and was designed by Ingram and Whysniky (1988). The questions are scored based on 5 options: 5=always, 4=often, 3=sometimes, 2=rarely and 1=never. In a study by Hashemi (2009), the reliability of this test was examined by Cronbach's alpha and split-half method and was reported as 0/94 and 0/95 respectively.

The purpose and content of CBT sessions: in this study, the participants of experimental group were divided into 3 groups (two groups of 15 and one group of 16 members) and received 10 sessions CBT (each was 90 minutes). The structure of sessions included referrals and familiarity, welcoming, motivation, an overview of the structures of the meetings and basic laws, creating a good relationship accompanied by empathy and active listening, understanding the concept of anxiety, the benefits of CBT, familiarizing with negative automatic thoughts, cognitive schemas, cognitive triangle, negative errors and the relationship between thoughts, feelings and behavior, verbal challenges, vertical narrow teaching practices, revision of beliefs, negative and anxious attitudes, substituting positive thoughts, relaxation training and visualizing a calm environment, creating a positive mental pattern and finally, preparation for ending the treatment. In the table below, the objectives and content of each session are summarized.

**Table 1- a summary of CBT sessions**

<b>content</b>	<b>session</b>
Introducing and familiarizing members with each other and the psychologist as well Conducting pretest Stating the objectives of the sessions Stating the rules and structure of the sessions	one
Educational lectures: introducing the basic model and cognitive therapy and ABC model Practice: remembering recent exciting events and replacing them according to the ABC model in the forms "a, b, c" Educational lectures: explaining about the cognitive model Practice: replacing the recalled events of the previous stage in the form "how thoughts create emotions" Homework: registration of unpleasant events in the daily forms "a, b, c" and how thoughts make emotions Feedback from participants	two
Reviewing homework: group analysis of events recorded in the record table of each member's thoughts Educational lectures: re-explanation and re-education of the cognitive model and describing the features of automatic thoughts Practice: using techniques known as "induced mood and thoughts" in order to better understand the cognitive model and ABC Homework: 1- the study of the logical error list 2. Writing unpleasant daily events in the table of thought records and identifying and writing the available logical errors in automatic thoughts Feedback from participants	three
Reviewing homework: the group analysis of logical error written in table of thought records Educational lectures: explaining about logical errors, cognitive model, rules and Dos Practice: "completing the second part of assumptions, rules and Dos", challenge with the assumptions and Dos through the use of "analysis of the advantages and disadvantages" technique Homework: 1- Writing unpleasant daily events in the table of thought records and identifying and writing the available logical errors in automatic thoughts 2. Completing the Dysfunctional Attitudes Scale (DAS) Feedback from participants	four
Reviewing homework: the group analysis of the scale and identifying dysfunctional attitudes of members Practice: the analysis of the advantages and disadvantages of the assumptions, using downward narrow technique to detect cognitive triangle	five

Homework: using the profit and loss analysis technique to challenge attitudes, assumptions and identified Dos Feedback from participants	
Reviewing homework: evaluating the implementation of techniques and teamwork on assignments made Educational lectures about cognitive triangle and fundamental beliefs Practice: using supporting and rejecting evidence techniques in order to challenge central beliefs, teaching problem solving in groups Homework: 1- determining the cognitive triangle beliefs and application of supporting and ejecting evidences 2- listing the problems encountered during the week Feedback from participants	six
Reviewing homework: group work on cognitive triangle of members and the implementation of supporting and rejecting evidence techniques Problem solving and group work Summarizing presentations Conclusion and feedback from participants	seven

To analyze data, SPSS 16 Software was used and the available methods in descriptive and inferential data have been implemented. In the descriptive statistics (mean, variance, standard deviation), in order to confirm or reject the research hypotheses, the inferential statistics method (analysis of covariance) was used.

### 3 RESULTS

**The results of descriptive statistics:** analysis of the data on demographic characteristics of respondents: demographic characteristics of subjects in terms of qualification, age and duration of illness can be seen in the following table:

**Table 2: frequency distribution of sample size according to the group segregation**

experimental	Control	group Statistical indicators
46	46	frequency
50	50	Frequency percentage

According to the results of table 1, 50% of the sample size is in the control group and 50% in the experimental group.

**Table 3: frequency distribution of demographic variables**

control	experimental	group variables	
17	15	diploma	education
5	8	Associate's degree	
18	16	bachelor	
6	7	master	
14	12	25 to 30	age
17	18	30 to 35	
15	16	35 to 40	
0	0	1 to month	Duration of illness
10	11	5 to 10 month	
12	10	10 to 15 month	
19	19	15 to 20 month	
5	6	20 to 25 month	

From 92 people of the sample population who responded to the questionnaire, most of them are with BA (16 individuals in experimental group and 18 individuals in control group). The majority of people are between 30

to 35 years old (18 individuals in experimental group and 17 individuals in control group). Also, most of these people have been affected by this illness for 15 to 20 month (19 individuals equally in both groups).

**Table 3: computing descriptive indexes of variables**

Highest score	Lowest score	Standard deviation	mean	stages	groups	Statistical indexes
140	42	24.23	94.54	pretest		
148	19	24.71	94.43	posttest	control	
142	44	24.12	88.71	pretest		optimism
150	37	28.16	106.33	posttest	experimental	

Table 3 shows the descriptive indexes of variable based on the groups in pretest and posttest. In the case of experimental group, the mean values of optimism was significantly higher in posttest compared to pretest.

**The results of inferential statistics:** in order to test the research hypotheses, the mean scores of both pretest and posttest of control and experimental groups were examined through univariate analysis of covariance.

**Hypothesis 1: Cognitive-behavioral therapy (CBT) is effective in increasing optimism of men with cancer.**

Table 4: the analysis of covariance in the case of optimism in control and experimental groups with the elimination of interaction

Test power	Chi Eta	Significance level	F	Mean square	Degree of freedom	Total square	The source of variance
0.26	0.02	0.18	1.79	1246.56	1	1246.56	Pretest of optimism
0.62	0.56	0.02	5.32	3705.55	1	3705.55	Between groups
				695.87	89	61924.8	Within groups
					92	993437	Total

As can be seen, (F (1, 92) – 5/32, p- 0/02, Eta – 0/56) indicates a significant difference between the two groups. In other words, there is a significant difference between control group and experimental group. Eta-0/56 states that 0/56% increase in optimism of participants of experimental group, can be attributed to CBT. According to the test power, this effect, with the accuracy of 0/62, is significant and the sample size has been totally adequate to implement treatment.

#### 4 DISCUSSION AND CONCLUSION

The purpose of this study was to examine the effectiveness of cognitive-behavioral therapy (CBT) in increasing positive thinking among patients with cancer. According to the results of this study, CBT has been effective in increasing positive thinking of patients in experimental group. In the case of the effectiveness of CBT in increasing positive thinking, The results obtained from examinations in the field of optimism show that CBT is highly effective among those with cancer and increases the level of optimism. Unfortunately and due to the lack of study on the effectiveness of CBT on positive thinking, this study is only consistent with a study by Safouraei and Kolia (2011) in which they proposed positive thinking strategies in life.

Since this illness leads to intense depression and sometimes mental health problems among patients, the importance of psychotherapy for these patients is clarified. The psychological consequences of cancer and many other concerns are expressed as the elements of psychological pressure and CBT targets them. The application of CBT interventions for patients with cancer has been characterized as highly effective. Those therapists whose planning is based on the basic elements of CBT, can match treatment with patients' problems in a much easier way. CBT encourages the therapist and patient to work together as a scientific team. This can be seen when the therapist and patient open their mind about the potential role of cognitions

and behavior in creation of current problems. The participatory nature of the relationship between therapist and patient and the emphasis on a set of skills for the treatment of mental health problems are related to CBT (White, 2010). The results for each hypothesis cannot be considered as a result of a specific component; since this is not possible, but due to the interconnected and multicomponent nature of this treatment plan. In explaining the obtained results, several reasons can be pointed out: a general reason goes back to the beneficial effects of the treatment group compared to the individual therapy. The treatment group helps people to learn effective social skills; then, try them on other group members (Richard, 2007). According to Yalom (1988), due to this fact that the patients with cancer tend to suppress their feelings about the disease, everyday become more unfamiliar with their existence and rarely allow new experiences to penetrate into their mind. As a result, they create pessimistic thoughts, doleful state of being tired of life, despair, loneliness and fear of death. Their participation in group therapy sessions, imaging their death and paying attention to their own feelings towards death lead to this state in which human looks into life through new ideas and different perspective as well. In the case of reducing anxiety and depression variables, the results obtained from the experimental group are consistent with the results from other studies such as Tatro and Montegomeri (2005), Edelman and Bel (1999) and in the case of increased life expectancy, Godwin (2001).

Another reason for obtaining these results was the application of cognitive-behavioral methods such as relaxation and imagery that were used in this study and their effectiveness in emotional disorders such as anxiety, depression and increase of life expectancy was confirmed in this study and the previous cases (Darvishi, 2009; Abbaspour, 2007; Rasooli, 2006). Another reason would be using vertical arrows teaching methods, challenging methods and changing attitudes methods that are highly effective in reducing anxiety and depression; because, according to cognitive approach, stressful states such as anxiety and depression are often intensified by radical thinking, continuation and distortion in data processing (Feri, 2005). This approach believes that individuals pay attention to consistent data with previous beliefs in a selective manner. Such a process is true in the case of remembering; because, individuals remember things in a selective manner consistent with their previous information (Lihi, 2009).

Among the limitation of this study, we can point to the variety of sexes, small sample group, constraints of time and place for the implementation of intervention, inability to follow the status of patients and inability to control variables such as social, marital and family status and the social protection and the impact of public education through the media. It is also suggested to expand the domain of this study with a larger sample size in order to extract more reliable results. It is suggested to conduct similar studies in other parts of country to make a better judgment about the effectiveness of this method. Awareness of available sources in the relevant context, leads to higher quality studies. It is recommended that psychologist give special trainings to families that cancer is a serious disease and it needs specific therapeutic approaches. It is also recommended to compare the effectiveness of this intervention with other medical or psychological interventions as well as other variables. Also, the psychological conditions of families participating in the study should be evaluated before the interventions.

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