

## **Effect of Cognitive Behavioral Nursing Intervention Program on Depression among Patients with Cancer**

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### **ABSTRACT**

**Background:** A cancer's diagnosis can have a substantial impact on mental health and wellbeing. Depression may hinder cancer treatment and recovery. Cognitive behavioral therapy is one of the most evidence-based psychological interventions for the treatment of several psychiatric disorders such as depression. **Aim:** This study aims to explore the effect of cognitive behavioral nursing intervention program on depression among cancer patients. **Subjects and Method: Design:** A quazi- experimental design (pre, post, and follow-up evaluation) was used. **Setting:** Oncology unit at Al Shifa Medical Complex in Port Said city. **Subjects:** The study subjects included 63 patients with cancer. **Tools:** Two tools were utilized to collect the data, Beck Depression Inventory and Dealing with Illness Inventory; in addition to personal and clinical data sheet. **Results:** The study revealed less than half (41.7%) studied patients with cancer had mild level of depression at pre intervention, while more than one quadrant (26.7) had mild level of depression at post intervention. Also, less than half (45%) of the studied patients with cancer had moderate level of depression at pre intervention, while more than one third (36.6%) of them had moderate level of depression at post intervention. **Conclusion** The cognitive behavioral nursing intervention program had significant lower level of depression among the studied cancer patients at post program compared to preprogram ( $P=0.000^{**}$ ). **Recommendations:** Therefore, cognitive behavioral interventions should be utilized in combination with standard care for cancer patients

**Keywords:** Cancer, Depression and Cognitive Behavioral Nursing Intervention.

## **INTRODUCTION**

Cancer is associated with several psychological issues, which have an essential influence in the severity and prognosis cancer. Cancer can cause inappropriate psychological responses such as depression, fatigue and anxiety. Cancer is very serious and feared diagnosis that causes patients significant distress. A cancer diagnosis causes more distress than non-neoplastic disorders with bad prognoses. Sustained high levels of mental discomfort in cancer patients may lead to depression. Depression is extremely common among cancer patients (Liu, 2021).

Previous studies reported that cancer patients with depression expressed a negative correlation between their emotional wellbeing and quality of life, and hence their recovery capacity. If such disturbances were not diagnosed accordingly, there will be delay in management, which in turn would affect management of cancer. This would cause regression at multiple levels including; poor compliance to treatment of cancer, low survival rate and also disturbed quality of life (Niedzwiedz, Knifton, Robb, Katikireddi & Smith, 2019).

Depression is generally considered to be the most important psychopathological comorbidities of cancer patients and experienced by approximately one-third of cancer patients. Since the very first moment of reaching a diagnosis of cancer, patients pass through multiple psychological phases starting with denial, anger, arguing and fighting. Based on the psychological and emotional support they receive, the outcome differs. Some patients continue to regress until they develop depression; however, others would overcome their despair and focus on their treatment journey (Singer, 2018).

Although there is evidence for the efficacy of chemotherapy and radiation therapy in treating cancer, they do not necessarily improve patients' psychological symptoms. Some patients may even leave chemotherapy due to their psychological symptom. It has been reported that cognitive behavior therapy (CBT) is significantly more effective than usual care that included the treatment for cancer based on the guidelines of the comprehensive cancer center (Gautam, Tripathi, Deshmukh & Gaur, 2020).

Cognitive behavioral therapy is the most empirically tested psychological intervention for depression, with over 75 clinical trials of CBT for depression having been conducted since 1977. When an individual complains of emotional distress like depression, CBT confirms two effective methods to modify feelings. First is to recognize, challenge, and modify thinking processes (i.e., how one sees a situation), and second is to modify behaviors. These methods lead to replacing the distorted and maladaptive thoughts with healthy thoughts and behaviors. Depressed patients are likely to engage in "cognitive distortions" include using a negative mental filter, jumping to conclusions, catastrophizing, and all or nothing thinking (Reavell, Hopkinson, Clarkesmith & Lane, 2018).

Patients with cancer often endure numerous physical and emotional challenges as they cope with a life-limiting illness. Not only do these patients have to deal with the notion that they have a terminal diagnosis, they also often experience high symptom burden and encounter a variety of difficult medical decisions. Specifically, patients must decide if the benefits of treatment outweigh the significant toxicities and unwanted side effects of cancer therapy. How patients cope with their illness can influence their ability to make decisions regarding both their cancer care and their care at the end of life. Additionally, patients' use of certain coping strategies can affect their desire for information about their disease, their self-efficacy, and how they adjust to the disease and its treatment. However, little is known about how patients cope with a diagnosis of incurable cancer (Nipp et al., 2016).

### **Significance of the study**

Cognitive behavioral therapy has the strongest evidence base of all the psychological treatments for depression. It has been shown to be effective in reducing symptoms of depression and preventing relapse. All models of CBT share in common an assumption that emotional states are created and maintained through learned patterns of thoughts and behaviors and those new and more helpful patterns can be learned through psychological interventions. They also share a commitment to empirical testing of the theory and clinical practice. Beck's Cognitive Therapy sees negative distorted thinking as central to depression and is the most established form of CBT for depression. A behavioral approach, such as Behavioral Activation, which emphasizes behavioral rather than cognitive change, also has a growing evidence base (Serfaty et al., 2020).

Most of the studies that assessed the levels of depression in patients on cancer patients reported that the prevalence of depression among these patients was 55% (Endeshaw, Walle & Yohannes , 2022). A considerable number of studies have been undertaken to evaluate and further investigate the psychological problems of patients on cancer patients, but few studies in Egypt, have been undertaken to manage these psychological problems. Therefore, it is deemed necessary to conduct this study to assess the effect of applying the cognitive behavioral nursing intervention on depression among cancer patients.

Coping with chronic illnesses such as cancer is always a threatening and a challenging process, and healthcare providers especially nurses need to be aware of these conditions. If coping strategies are used effectively, they can help in improving well-being and overcoming depression and anxiety of patients (Nipp et al., 2016).

### **AIM OF THE STUDY**

This study aims to explore the effect of cognitive behavioral nursing intervention program on depression among cancer patients.

### **Research objectives**

1. Measure severity of depression among patients with cancer.
2. Measure degree of coping methods with illness among patients with cancer.
3. Design cognitive behavioral nursing intervention program for patients with cancer.
4. Implement cognitive behavioral nursing intervention program for patients with cancer.
5. Evaluate effect of cognitive behavioral nursing intervention program on depression levels among patients with cancer.

### **Research Hypothesis**

Application of cognitive behavioral nursing intervention program will decrease depression levels among cancer patients.

## **SUBJECTS AND METHOD**

### **A. Technical design**

#### **Study design**

A quazi- experimental design with pre, post, and follow-up evaluation was used for the contemporary study.

#### **Study setting**

The current study was conducted in the oncology unit at Al Shifa Medical Complex in Port Said city. The hospital is under the supervision of Egyptian health care authority hospital at Port Said government. There are four floors in the hospital. The operating theater, intensive care unit, blood transfusion unit, and administrative offices are located on the first floor. Second floor consists of surgical unit, Oncology unit, orthopedic unit and chemotherapy unit. Third floor consists of medical unit, oncology surgery section. Finally fourth floor consists of residence accommodated for expatriates and doctors and cafe. The oncology unit has a bed capacity of around 27 patients. All of these beds are always filled. The hospital serves five governorates namely Port Said, El Ismailia, El Suez, North Sinai and South Sinai.

#### **Study sample**

A purposive sample comprised of 63 patients with cancer attending oncology units. Patients were separated into four groups; two male groups (each with 18 patients) and two female groups (one group with 13 patients and other with 14 patients). However, the final number of the sample size amounted to 60 patients who completed cognitive behavior nursing intervention as three of the original number dropped from the study.

#### **Inclusion criteria**

Patients with cancer, who were diagnosed with a minimum of three months and not exceeding one year, receive chemotherapy and have symptoms of depression according to Beck's Inventory.

### Sample size

A sample size was determined by using single population proportion formula (Thamposon, 2012) as the following:

$$\text{Sample size (n)} = \frac{N \times p(1-p)}{\left[ \left[ N-1 \times \left( d^2 \div z^2 \right) \right] + p(1-p) \right]}$$

#### Where:

n: Sample size

N: Population size (150)

z : Confidence level at 95% (1.96).

d: Error proportion (0.05)

P: Probability (0.50)

The calculated sample size was 60 patients with cancer. Due to expected non-participating rate (5%), the final sample size was 63 patients. As expected, the final sample size was 60 patients due to three of studied patients have died after sixth week during implementation of nursing intervention.

### Tools of data collection

#### Tool I: Beck Depression Inventory

The Beck Depression Inventory (BDI-II) was developed by Beck, Steer, and Brown (1996) in an English Language to measure severity of depression in patients. It was translated into Arabic language by Ghareeb (2000). This scale consists of 21 items, each item has four possible degrees of severity, five of which are affective symptoms, seven cover cognitive symptoms and nine are somatic symptoms. The 21 items cover mood, pessimism, sense of failure, self-dissatisfaction, guilt, punishment, self-dislike, self-accusation, suicidal ideas, crying, irritability, social withdrawal, indecisiveness, body image change, work difficulty, insomnia, fatigability, loss of appetite, weight loss, somatic

preoccupation, and loss of libido. The scale's test-retest reliability was 0.74 and Alpha reliability was 0.83 (García-Batista et al., 2018).

### **Scoring system**

The scoring system used four point Likert scale. Each likert-type ranging from (zero; indicated to no or mild symptoms) to (three; indicated to severe symptoms). The following is the final degree interpretation: Absence of depression between 0 and 13; mild depression between 14 and 19; moderate depression between 20 and 28; and severe depression between 29 and 63.

### **Tool II: Dealing with Illness Inventory**

Dealing with Illness Inventory was created by Namir, Wolcot, Fawzy, and Alumbaugh (1987) in an English Language. This inventory was validated and translated into Arabic language by Foad, Abdel Azzim, El Rae, and Bakry (1999) and it used to measure three main coping methods including active cognitive coping, active behavioral coping and avoidance coping. This inventory is a 48-item measures cognitive and behavioral responses made in reaction to deal with the illness.

#### **The three main coping methods are:**

- Active cognitive coping (16 Items; 1, 3, 4, 6, 8, 15, 16, 17, 19, 34, 37, 40, 41, 43, 45, and 46).
- Active behavior coping (20 Items; 5, 7, 9, 11, 12, 14, 18, 20, 21, 22, 23, 29, 30, 31, 32, 36, 38, 39, 47, and 48).
- Avoidance coping (12 Items; 2, 10, 13, 24, 25, 26, 27, 28, 33, 35, 42, and 44).

### **Scoring system**

This questionnaire contains forty-eight statements, each likert-type ranging from never (1) to always (5). The range of coping strategies is 48-240, with higher scores meaning higher use of coping methods, as follow

- Higher use of coping methods score ranging from 168 to 240
- Lower use of coping methods score ranging from 48 to 167.

**In addition to Personal and Clinical Data Sheet;** it was developed by the researcher after review of literature in Arabic language. Personal characteristics included

gender, age, residence, marital status, educational level, working status and monthly income. Clinical characteristics included cancer types, duration of chemotherapy treatment and physical disease associated with cancer.

## **B. Operational design**

### **Tool's validity**

The Beck Depression Inventory (BDI-II) was developed by Beck, Steer, and Brown (1996) in an English Language and it was translated into Arabic language by Ghareeb (2000). Dealing with Illness Inventory was created by Namir, Wolcot, Fawzy, and Alumbaugh (1987) in an English Language and it was validated and translated into Arabic language by Foad, Abdel Azzim, El Raei, and Bakry (1999).

### **Tool's reliability**

Beck Depression Inventory's test retest reliability was 0.74 and Alpha reliability was 0.83 (García-Batista et al., 2018). Dealing with Illness Inventory had good internal consistency.

### **Field work**

After taking pilot study, researcher had stopped in study for three months due to spread of the Coronavirus disease (COVID-19). The researcher interviewed the director of Al Shifa Medical Complex to introduce self and clarify the intent of the study, who referred her to the director of human resources and then to the head nurse in the oncology unit. Prior to beginning the field work, the overall number of cancer patients attending the oncology unit at Al Shifa Medical Complex was gathered from head nurse in the unit in order to estimate the sample size. Preparation, data collection, planning, implementation, and evaluation of nursing intervention lasted for 11 months from the first of January 2021 to the end of November 2021.

Individually, each patient was interviewed to obtain the required data. The researcher introduced herself to the patient at the beginning of the interview, and discussed the aim of the study. Applying tools to assess patients with depression. Patients with mild, moderate and /or severe depression were included in the study. The intervention consisted of eleven semi-structured interview sessions; each session lasted

for 30 - 45 minutes along 11 weeks duration. The sessions for all groups were conducted before the chemotherapy session to avoid patients' fatigue at the patients' lounge.

Patients were helped to identify the real benefits that will accrue to them after participating in the intervention to encourage the active participation. The first session included a written and verbal protocol for cooperation between the researcher and members of each group. This protocol sets the grounded rules of each group and the instructions of the intervention. At the beginning of each session, the researcher welcomed the patients of each group, reassured them and setting goals for each session that included the discussion of the prior homework from the last session and how to achieve the purpose of each session. Homework of each session provided in simple language supported by training during the sessions using case studies and illustrations.

The study tools were given to the studied cancer patients. They filled in them using self- report technique that allow them to fill in their responses by themselves. After completion, the researcher ensured that all items included in the tools were completed. Then the studied cancer patients were thanked for their cooperation and time they generously offered. Immediately, after the implementation of the cognitive behavioral nursing intervention at the end of the 11<sup>th</sup> session, the researcher reassessed the studied patients using the study tools, and also after 3 months for follow up.

### **Pilot study**

Before entering the actual study, a pilot study was carried out on 10% of the study sample which included seven patients, who were selected randomly. The pilot study was done to ascertain clarity, feasibility, and applicability of the study tools, estimate the time required for filling in the tools and to identify obstacles that may be faced during data collection. Studied patients who shared in the pilot study were excluded from the entire sample of research work. Based on the findings of pilot study, the tools were applicable and clear. Thus, no modifications were done. It was conducted from the first of September to the end of September 2020.

## **Ethical considerations**

The study was accepted by the Scientific Research Ethics Committee of the Faculty of Nursing, Port Said University; code no NUR (6/8/2023) (28). After explaining the aim of the study, the cancer patients were asked to give their informed consent to share in the study. Patient' voluntary participation was confirmed as they were informed that they had the right to withdraw from study at any time. Confidentiality of the collected information was confirmed and anonymity was ensured.

## **C. Administrative design**

Before beginning any stage in the study, an official letter was sent from the Dean of the Faculty of Nursing Port Said University, to the director of the above mentioned hospital requesting his permission and cooperation to carry out the study after explaining the aim of the study.

## **D. Statistical design**

Data were collected, organized, tabulated and statistically analyzed using SPSS version 22.0. Quantitative data were expressed using the means, and standard deviations. Qualitative data were expressed using numbers and percentages. Qualitative categorical variables were compared using chi-square test. ANOVA test was used to compare between more than two groups. P value  $\leq 0.05$  was considered to be statistically significant, and highly statistically significant at P value  $\leq 0.01$ .

## **Cognitive Behavioral Nursing Intervention Program**

### ***Aim of the Cancer Cognitive Behavioral Nursing Intervention Program***

This program aims to decrease levels of depression levels among patients with cancer.

### ***Objectives of the Cancer Cognitive Behavioral Nursing Intervention Program***

#### **Specific Objectives**

- Patients will be able to identify the nature of the cognitive behavior nursing intervention program and the rules of the participation.
- Patients will be able to recognize symptoms of depression related to distress.

- Patients will be able to understand the difference between feeling and thoughts, including how these relate to behaviors.
- Patients will be able to identify automatic thoughts and cognitive distortions which contribute to the portion of activity restriction.
- Patients will be able to master stress management relaxation techniques.
- Patients will be able to challenge any cognitive distortions.
- Patients will be able to overcome depression and life stressors through systematic desensitization technique
- Patients will be able to use problem solving strategies effectively in identifying the best technique for dealing with difficulties or situations related to cancer illness.
- Patients will be able to improve their mood through increasing behavioral activation.
- Patients will be able to identify advantages and disadvantages of the options for dealing with the stressors related to cancer disease.
- Patients will be able to recognize the warning signs for cognitive or behavioral regression.

### **Cognitive Behavioral Nursing Intervention Program Sessions**

#### **Session one: Mutual understanding and rapprochement.**

##### **Procedure**

- Ice breaking can be an effective method of beginning a training session or team building event.
- Develop a written and verbal protocol for cooperation between the researcher and members of each group.

##### **Homework**

Develop easy homework assignments aiming to recognizing the patients' problem orientation like creating a stress list.

#### **Session two: Psycho-education about depression.**

##### **Procedure**

- Group discussion and psycho-education.

- Practice identifies thoughts and may rate emotions accompanied with life stresses.

### **Homework**

Establish self-monitoring homework assignments for the patients so that they may practice identifying cognitions and may rate emotions associated with life stressors.

### **Session three: Identification of automatic thoughts and cognitive distortions.**

#### **Procedure**

- Train patients to use the daily thought record technique to reframe their thoughts.

### **Homework**

Practice the daily thought record technique between sessions for using the written form.

### **Session four: Relaxation techniques.**

#### **Procedure**

- Train patients on three relaxation techniques; Diaphragmatic deep breathing, pursed-lips breathing and mindfulness meditation.

### **Homework**

Practice the learned techniques between sessions at home with written feedback.

### **Session five: Dealing with cognitive distortions.**

#### **Procedure**

- Train patients on “Examine the Evidence” record technique.

### **Homework**

Practice to challenge the distortions of cognitions which present as barriers to autonomy and social roles through using “Examine the Evidence” record technique at home.

**Session six: Using of systematic desensitization to overcome depression.**

**Procedure**

- Train patients on systematic desensitization technique.

**Homework**

Continue practicing the learned relaxation techniques as well as systematic desensitization technique between sessions at home.

**Session seven: Problem solving skills training.**

**Procedure**

- Train patients on generating alternatives record technique and steps of problem-solving.

**Homework**

Recommend that each patient applies problem-solving skills by following the steps of problem solving and by using the Generating Alternatives record technique for at least two problems between sessions at home.

**Session eight: Behavioral activation.**

**Procedure**

- Train patients on Activity Schedule using the activity record technique.

**Homework**

- Guide patients to record and rate at least 1 or 2 activities each day on the Activity Schedule using the activity record technique.
- Ask each patient practice problem solving strategies, using the Generating Alternatives record technique.

### **Session nine: Reevaluating and prioritizing stressors.**

#### **Procedure**

- Train patients on Coping with Stressors Worksheet.

#### **Homework**

Recommend utilizing the Coping with Stressors Worksheet at home to recognize a small part of the stressful event with which adaptation can begin to evaluate the solution.

### **Session ten: Self-control triad and Guided Imagery training.**

#### **Procedure**

- Train patients on self-control triad and Guided Imagery techniques.

#### **Home work**

Train patients on self-control triad and Guided Imagery techniques.

### **Session eleven: The terminating session**

Enhance self-instruction or coaching to maintain progress in reducing depressive symptoms and to prevent relapse.

## **RESULTS**

**Table 1;** shows socio-demographic characteristics of the studied patients; it is clear that, more than half of the studied patients (56.6%) are male; it is noticed that nearly half of the studied patients (48.3%) are in the age group of 40 to less than 50 years old. Also, more than three quarters of studied patients (76.7%) are married; approximately two thirds of the studied patients (66.7%) have finished secondary education; less than two thirds of the studied patients (61.7%) are working. Also, it is founded that, only less than one third of the studied patients (31.7%) report that, their monthly income are adequate.

**Table 2;** illustrate that 73.3% studied patients have benign cancer. Looking at number of sessions of chemotherapy, more than one third of studied patients (40.0%) have taken from six to less than nine sessions. Regarding presence of disease associated with cancer, it notices that 46.7 % of studied patients have physical diseases associated with cancer.

**Table 3;** demonstrated the improvement of depression level among the studied patients at pre, post and follow up intervention. As shown, there are highly statistically significant difference between levels of depression among the studied cancer patients throughout pre- post program ( $P= .000^{**}$ ). The table also clarifies that there was decrease in the percentage of studied cancer patients who had mild degree of depression during program from 41.7% at preprogram to 26.7%, and within follow-up decrease and reaches to 23.3%. Also, it shows that there was decrease in percentage of studied cancer patients who had moderate degree of depression during post program to 36.6% from 45% within preprogram. 13.3% of the studied cancer patients had severe degree of depression at pre intervention and the percentage decreases to be 11.7% at post intervention to slightly decrease to 10% during follow-up period which mean that intervention was effective to decreases depression degree among studied cancer patients.

**Table 4;** puzzles out degree of coping with illness among the studied cancer patients at pre, post and follow up program. As shown in the table, nearly one third of the studied cancer patients (31.7%) had higher degree of using coping strategies at preprogram and the percentage increase to be (73.3%) at post program, and slightly decreased during follow up to 61.7%. Also, there is increase in the percentage of patients who had lower degree of using coping strategies (68.3%) at preprogram and the percentage decrease to be (26.7%) at post program, and slightly increased during follow up to 38.3%. also, It illustrates that there are highly statistically significant differences noticed between pre and post program regarding total coping with illness ( $p= .000^{**}$ ).

**Table 5;** submits comparison between coping methods with Illness and degree of coping among studied cancer patients at pre, post and follow-up program. The result revealed that, nearly three quadrants of studied cancer patients (73.3%) had higher degree of active cognitive coping with illness at post program , while less than one third (26.7%) of them had lower degree of active cognitive coping methods at post program. Also, three quadrants of studied patients (75%) had higher degree of avoidance coping methods at post program, while only one quadrant (25%) of studied cancer patients had lower degree of avoidance coping methods

at post program. Also, there are not any statistically significant association noticed when compared types of coping methods in relation to its degree among studied cancer patients throughout post program and follow up.

**Table 1: Number and percentage distribution of the studied patients' according to their socio-demographic characteristics (n=60).**

Personal characteristics	N	%
<b>Gender</b>		
Male	34	56.6
Female	26	43.3
<b>Age</b>		
20 - < 30 year	4	6.7
30 - < 40 year	12	20.0
40 - < 50 year	29	48.3
≥50	15	25.0
<b>Mean± SD</b>	44.16±1.06	
<b>Range of age</b>	20 – 58	
<b>Residence</b>		
Rural	38	63.3
Urban	22	36.7
<b>Marital status</b>		
Single	7	11.7
Married	46	76.7
Divorced/Widow	7	11.6
<b>Educational levels</b>		
Not read and write /Basic education	5	8.3
Secondary education	40	66.7
University education / Postgraduate	15	25.0
<b>Working status</b>		
Working	37	61.7
Not working	23	38.3
<b>Monthly income</b>		
Adequate	19	31.7
Inadequate	41	68.3

**Table 2: Number and percentage distribution of the studied patients with cancer according to their clinical characteristics (n=60)**

Clinical characteristics	N	%
<b>Type of cancer</b>		
Benign Cancer	44	73.3
Malignant Cancer	16	26.7
<b>Duration of chemotherapy</b>		
Less than three sessions	10	16.7
Three to less than six sessions	11	18.3
Six to less than nine sessions	24	40.0
Nine sessions and more	15	25.0
<b>Physical diseases associated with cancer</b>		
Yes	28	46.7
No	32	53.3
<b>If the answer is yes, what is the type of disease n=28</b>		
Diabetes	10	35.7
Hypertension	12	42.9
Heart diseases	5	17.8
Kidney diseases	1	3.6

**Table 3: Comparison between the studied patients with cancer at pre, post and follow up intervention according to their depression levels (n=60).**

Levels of depression	Pre		Post		Follow- up		Pre-post	Pre-follow-up	Post-follow-up
	No	%	No	%	No	%			
Absence of depression	0	0.0	15	25.0	21	35%	20.112 0.000 **	7.098 0.010*	1.976 0.063
Mild Depression	25	41.7	16	26.7	14	23.3			
Moderate Depression	27	45.0	22	36.6	19	31.7			
Severe Depression	8	13.3	7	11.7	6	10.0			
$\chi^2 =$ Chi-square *Significant at p <0.05. **Highly significant at p <0.01. Not significant at p>0.05									

**Table 4: Degrees of coping with illness among the studied cancer patients with cancer at pre, post and follow up program (n=60).**

Degree of coping	Pre		Post		Follow- up		$\chi^2$ & P-Value		
	No	%	No	%	No	%	Pre-Post	Pre-follow-up	Post-follow-up
Higher use of coping Methods	19	31.7	44	73.3	37	61.7	16.329 0.000	6.788 0.012	1.009 0.078
Lower use of coping Methods	41	68.3	16	26.7	23	38.3	**	*	
$\chi^2$ = Chi-square      Significant at p <0.05. **Highly significant at p <0.01. Not significant at p>0.05									

**Table 5: Comparison between types and degree of coping among studied patients with cancer at pre, post and follow up program (n=60).**

coping methods	Degree of coping				$\chi^2$ & P-Value		
	High		Low		Pre-post	Pre-follow-up	Post-follow-up
	N	%	N	%			
<b>Active cognitive coping</b>							
Pre	22	36.7	38	63.3	6.952 0.012*	4.887 0.015*	1.227 0.149
Post	44	73.3	16	26.7			
Follow up	41	68.3	19	31.7			
<b>Active behavior coping</b>							
Pre	20	33.3	40	66.6	7.241 0.012*	6.731 0.018*	1.645 0.059
Post	41	68.3	19	31.7			
Follow up	39	65.0	21	35.0			
<b>Avoidance coping</b>							
Pre	16	26.7	44	73.3	10.347 0.000**	3.505 0.031*	2.001 0.051
Post	45	75.0	15	25.0			
Follow up	43	71.7	17	28.3			
$\chi^2$ = Chi-square      * Significant at p <0.05. **Highly significant at p <0.01. Not significant at p>0.05							

## **DISCUSSION**

Patients with cancer frequently experience depression. Stress is common a trigger for depression and cancer is one of the most stressful events that a person may go through. These disorders may interfere with cancer treatment (Liu et al., 2022). Cognitive behavioral therapy is one of the most empirically supported psychological interventions for the treatment of variety psychiatric disorders, including depression, anxiety disorders, somatoform disorder, and substance use disorder. A meta-analysis of 115 studies found that CBT is an effective treatment strategy for depression combined treatment with pharmacotherapy is significantly more effective than pharmacotherapy alone (Gautam et al, 2020).

The current study findings regarding the effect of cognitive behavior nursing intervention program on depression showed that there were highly statistically significant relationships between levels of depression among the studied cancer patients at pre- post program. This mean that the percentage of depression is declined at the end of the CBT nursing intervention program as there were a significant association between pre/ post-test scores and pre/ follow up scores. This can be indicated that patients with depression tend to create cognitive distortions, which result in a negative mood status and inadequate behavior. Cognitive behavioral nursing intervention uses well-structured techniques to promote the reorganization of negative thoughts, mood status, and adjustment of behavior. The significant decreases in depressive symptoms was most probably because of cognitive behavior nursing intervention techniques encouraged patients to express their thoughts, instructed to identify and reorganize those thoughts that might be interfering with their mood status and daily behaviors.

As regard to levels of depression, less than half of the studied cancer patients had moderate level of depression at preprogram, compared to slightly more than one third post program and also slightly less than one third within follow up. This means that cognitive behavior intervention was effective to manage and reduce severity of depression, and patients have participated in an effective manner. This study was consistent with the study of Sutanto , Ibrahim, Septiawan, Sudiyanto and Kurniawan (2021), who stated study about effect of cognitive behavioral therapy on improving anxiety, depression, and quality of life in cancer patients at Dr. Moewardi Surakarta's hospital in Asia and reported a difference in score change post-test–pre-test. This means

that the therapy adjuvant CBT psychotherapy intervention was effective in reducing levels of depression.

Agree with that, Liu et al. (2022) who did study about effects of internet-based cognitive behavioral therapy on anxiety and depression symptoms in cancer patients at first affiliated Hospital of Soochow University in china and found that, cognitive behavioral therapy was effective in improving depression symptoms in cancer patients, especially those undergoing anti-cancer treatment. In the same line, Onyedibe, Nkechi, and Ifeagwazi (2020) conducted study about effectiveness of group cognitive behavioral therapy on anxiety and depression for Nigerian Breast Cancer at Lagos State University Teaching Hospital South West Nigeria patients and found that , there was a significant difference in depression between participants in group CBT and control group.

This is in the same track with Sheikhzadeh, Zanjani and Baari (2021) who studied efficacy of mindfulness-based cognitive therapy and cognitive behavioral therapy for anxiety, depression, and fatigue in cancer patients at Imam Reza hospitals in Mashhad , Iran and found that a significant reduction in depression, anxiety, and fatigue scores in CBT and mindfulness-based cognitive therapy groups. This was incongruous by the study of Liu et al. (2021) in their study about effects of cognitive behavioral therapy for depression and anxiety in patients with advanced carcinoma in Japan observed that patients in the CBT group showed significantly less depression and anxiety than patients in the treatment as usual group ( $P < .05$ ).

This was incongruous by the study of Sun et al. (2019) in china entitled "The Efficacy of Cognitive Behavioral Therapy to Treat Depression and Improve Quality of Life among Early-Stage Breast Cancer Patients" and stated that depression and quality of life improvement was not observed in the CBT group within or after 4 months of treatment. In the same context, Serfaty et al. (2020) who studied effectiveness of cognitive behavioral therapy for depression in advanced cancer at England and found that, no benefit for using CBT and there was no treatment effect for using CBT.

The present study results denoted that a sever level of depression among the studied cancer patients was slightly decreased at post program and follow up compared to preprogram. Accordingly, cognitive behavior nursing intervention might be recommended for the treatment of mild to moderate levels of depression. These results

could be explained by the fact that most of the studied patients with severe levels of depression didn't achieve a moderate range of symptoms at the post and follow up intervention.

This proved that patients who were sever depressed, might be more hopeless, had higher levels of dysfunctional attitudes, or had a lower level of pleasant events in their lives as those studied patients who were at the beginning of cancer treatment, were either divorced or single patients, or jobless, or suffering from physical disease. Hence, these patients who had severe level of depression are probably better suited for more intense therapist administered treatments or pharmacotherapy or need a combination between cognitive behavior nursing intervention and medication. These study results are in agreement with the American Psychiatric Association's guidelines for the treatment of depression that indicated that it is conceivable that psychotherapy combined with anti-depressant medications has a higher treatment effect mainly for severely depressed patients (American Psychiatric Association, 2018).

Cancer patients need to cope with various aspects of their illness. Recognizing the coping skills and symptoms of depression provides valuable information for planning specific management and medical care delivery and improving the performance of oncology nurses. The contemporary results clarified that there are highly statistically significant differences noticed between pre and post program regarding total coping with illness. These results might be explained that active cognitive coping methods such as "acceptance, facing and solving the problem thinking about the positive changes and meaning of life, planning, praying and trusting in God, identifying the nature of illness and determining its needs, and gaining experiences from other patients with the same illness" are very useful strategies for improving patients' attitudes, beliefs, and thoughts about cancer treatment, decreasing their involuntary responses, and help them to become more accustomed to cancer treatment and might perceive it as a routine activity that result in decreasing their symptoms of depression.

Also the active behavior coping methods such as "becoming more socially, seeking help to change things in the situation, reliance on others for emotional, informational, and instrumental support, self-help efforts, turned to work or other things to keep ray mind off, enjoyed every day events, exercised more, used meditation, self-hypnosis or imagery, and cried, yelled, or laughed more to express feelings" are helpful

skills for the patients in managing stresses, finding emotional and social support, improving mood state, and expressing their feeling in desirable ways that result in decreasing their symptoms of depression.

Agree with that Lai, Chen, Lu and Huang, (2021) who studied study entitled "Cognitive Behavioral Therapy plus Coping Management for Depression and Anxiety on Improving Sleep Quality and Health for Patients with Breast Cancer" and reported that, CBT is efficacious and can be provided by nurses to enhance patients' coping skills. In the same line, Ghahari et al., (2017) who study the effect of cognitive-behavioral therapy and spiritual-religious intervention on improving coping responses and quality of life among women with breast cancer and reported that, CBT is showing improvement in coping response and quality of life.

In the same direction, Kelkil, Atnafu, Dinegde and Wassie (2022) who study coping strategies of stress and its associated factors among breast cancer patients in Tikur Anbesa specialized hospital, Ethiopia and reported that about, nearly half of breast cancer patients have a positive coping strategy and it was effective in declining percentage of depression and anxiety. Also, another study conducted by Noyes et al (2022) entitled "Problem-solving skills training in adult cancer survivors" at clinics at Roswell Park Comprehensive Cancer Center, Buffalo in New York who reported that, problem solving skills training patients lead to reduction in level depression, improvement in quality of life and lower use of hospital and emergency department services compared to care as usual patients.

This was incongruous by McKiernan et al, (2010) who conducted study entitled "A controlled trial of group cognitive behavior therapy for Irish breast cancer patients" and didn't support the impact of CBT to improve their coping response. In addition, another study conducted by Gibbons & Groarke (2018) entitled "Coping with chemotherapy for breast cancer" who found that there was negative relationship between coping and levels of depression.

In the same line, Kargar, Okati, Ansari, and Mohammadi (2022) conducted study about evaluation of quality of Life, social Support and coping strategies and illness adjustment in patients with breast cancer at hospitals in Zahedan in Iran, and stated patients who participated in this study used the cognitive coping strategy more than

avoidance and emotional turmoil coping strategies which therefore lead to decreasing level of stress. Also, Lucero, Villacreses and Ecuador (2022) conducted study about coping strategies in cancer patients and found that, high scores in the eight coping strategies concerning the other time intervals.

These studies showed that cognitive behavior nursing intervention is effective to bring down depression among cancer patients in a desirable way; thus, the objective to explore effective of the CBNI in this study was achieved. Nonetheless, the severity of symptoms was an obstacle to the effectiveness of CBNI. Thus, identifying patients who are most likely to benefit from cognitive behavioral nursing intervention as well as patients who are likely to deteriorate during such intervention will be an important target for future research.

## **CONCLUSION**

The finding implies that, it can be determined that, there was highly statistically significant relationship between levels of depression among the studied patients at pre and post cognitive behavior nursing intervention

## **RECOMMENDATIONS**

*In the light of the results of the present study, the following recommendations were suggested:*

- Cognitive behavior nursing intervention should be the basis for nurses in providing comprehensive nursing intervention to patient with cancer who having psychological problems.
- Nursing interventions and cognitive behavior therapy should work together to provide a comprehensive and a holistic approach to mental health treatment for patient with cancer patients to manage their psychosocial problems by combining chemotherapy treatment, assessment, monitoring, health education and providing support and encouragement.
- Nurse should conduct assessments and monitoring patients with cancer to identify changes in symptoms or behaviors.
- Nurses can educate patients with cancer about cognitive behavior therapy and the strategies used in the therapy.

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## تأثير البرنامج التداخلى التمريضى المعرفى السلوكى على الاكتئاب لدى المرضى المصابون بالسرطان

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### الخلاصة

تؤثر الإصابة بمرض السرطان على الصحة النفسية بناق واسع. قد يعيق الأكتئاب علاج السرطان والشفاء منه. يعد التدخل التمريضى المعرفى السلوكى أحد أكثر التدخلات النفسية الداعمة لعلاج العديد من الاضطرابات النفسية مثل الاكتئاب. **الهدف:** استكشاف أثر تطبيق التدخل التمريضى المعرفى السلوكى على مستويات الاكتئاب لدى مرضى السرطان. **طرق البحث:** استخدمت هذه الدراسة المنهج شبه تجريبى للبحث ( الاختبار القبلى والبعدى). **المكان:** قسم الاورام بالمجمع الشفاء الطبى بمدينة بورسعيد **العينة:** قد اجريت هذه الدراسة على 63 مريض من مرضى السرطان. **أدوات جمع البيانات:** تم استخدام أداتان لتجميع البيانات وهي مقياس أرون بيك واخرون للاكتئاب، مقياس التعامل مع المرض، بالإضافة الى استمارة البيانات الشخصية والاكلينيكية. **النتائج:** تشير الدراسة أن أقل من نصف (٤١.٧%) مرضى السرطان كان لديهم مستوى بسيط من الاكتئاب فى مرحلة ما قبل تطبيق البرنامج ، بينما كان يعاني أكثر من ربعهم (٢٦.٧%) من مستوى بسيط من الاكتئاب فى مرحلة ما بعد تطبيق البرنامج. كذلك أوضحت الدراسة أن أقل من نصف (٤٥%) مرضى السرطان الذين شملتهم الدراسة كانوا يعانون من مستوى متوسط من الاكتئاب فى مرحلة ما قبل تطبيق البرنامج ، بينما كان أكثر من ثلثهم (٣٦.٦%) يعانون من مستوى متوسط من الاكتئاب بعد تطبيق البرنامج **الخلاصة:** خلصت الدراسة الى وجود علاقة ذات دلالة إحصائية عالية بين درجات الاكتئاب لدى المرضى الخاضعين للدراسة عند المقارنة بين قبل وبعد تطبيق البرنامج. **التوصيات:** لذلك ، يجب استخدام التدخلات التمريضية المعرفية السلوكية جنباً إلى جنب مع العلاج المعتاد لمرضى السرطان .

**الكلمات المرشدة:** السرطان، الاكتئاب ،التدخل التمريضى المعرفى السلوكى.