

## The Effect of Cognitive Behavioral Nursing Intervention on Cognitive Distortions and Self-Efficacy among Patients with First Episode Major Depressive Disorder

Fatma Mohammed Ibrahim, Shimaa Saied Adam

\* Psychiatric/Mental Health Nursing, Faculty of Nursing - Ain Shams University.

### Abstract

**Background:** Depression is a significant global psychosocial health problem. CBT is considered one of the most effective modes of treatment for depression, and qualified psychiatric nurses have played a significant role in disseminating this type of intervention using evidence-based practice. This study aimed to assess the effect of cognitive behavioral nursing intervention on cognitive distortions and self-efficacy among patients with first episode major depressive disorder. A quasi-experimental study design on one group pre/post assessment was utilized on 45 patients who diagnosed with first episode major depressive disorder and attending outpatient clinic, at El-Abassia Mental Health hospital. Tools of data collection: The data was collected using an interview questionnaire that included four sections as the following: 1) patient's demographic data; 2) Depression, Anxiety and Stress Scale (DASS); 3) Inventory of Cognitive Distortions (ICD); and 4) Generalized Self-Efficacy scale. Results revealed that, there were highly statistically significant differences between pre- and post- cognitive behavioral nursing intervention regarding different types of cognitive distortions: discounting the positive/personalization, magnification, fortune-telling, externalization of self-worth, perfectionism, absolutistic/dichotomous thinking, emotional reasoning, minimization, comparison to others, should statements, catastrophizing, and emotional reasoning and decision making of patients under the study, as well as total score of cognitive distortions in which P value=.000. Regarding patients' level of self-efficacy, data analysis showed that there was a highly statistically significant difference between pre- and post- cognitive behavioral nursing intervention in which  $t = 16.68$  at  $P = .000$ . Also, there were highly statistically significant differences between pre- and post- cognitive behavioral nursing intervention regarding levels of depression, anxiety, and stress of patients under the study in which P value=.000. The study concluded that cognitive behavioral nursing intervention has positive effect on cognitive distortions and self-efficacy among patients with first episode major depressive disorder. Recommendation: Application of CBT sessions led by qualified psychiatric nurses as a routine rehabilitation for newly patients diagnosed with major depressive disorder.

**Key words:** Cognitive Behavioral Nursing Intervention- Cognitive Distortions - Self-Efficacy - Major Depressive Disorder.

### Introduction

Depression is a significant universal psychosocial health problem that exerts a high effect on the life of patients and their families. Depressive disorders are mainly

characterized by sadness, loss of interest or pleasure, and feelings of guilt or low self-worth. Depression can be long-lasting or recurrent, substantially impairing an

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individual's ability to function at work or school or to cope with daily life. At its most severe, depression can lead to suicide (WHO, 2017). Major depressive disorder (MDD) is defined as a period of two weeks or more in which at least five symptoms are experienced most of the day nearly every day, including either persistent and pervasive depressed mood or the loss of enjoyment and interest in nearly all activities, weight/appetite disturbance, disturbance in sleep, psychomotor retardation/agitation, fatigue, feelings of guilt/worthlessness, decreased decision-making/concentration, and suicidal ideation (Sharma, Hingar, and Gupta, 2016). MDD is one of the most common mental health diseases, with high personal and societal costs. The proportion of the global population with depression in 2015 is estimated to be 4.4%, and ranks fourth among the leading causes of disability-adjusted life-years worldwide. By 2030, it is predicted to be the leading cause of disease burden (WHO, 2017). According to Beck, cognitive theory of depression assumes two basic elements: the cognitive triad and cognitive distortions. The cognitive triad includes a negative view of oneself in which the person tends to see him/herself as inept or inadequate; a negative view of the world, including relationships, work and activities; and a negative view of the future, which appears to be cognitively correlated to the degree of hopelessness. Beck observed that the patients with depression describe their experience negatively and expect undesirable outcomes for their problems. This manner of interpreting situations and expectations works as a type of trigger for depressive behavior, which in turn, following a new interpretation, endorses the individual's personal feelings of inadequacy, hopelessness and low self-esteem (Abreu, Powell, and Sudak, 2012; and De Oliveira, 2012).

In the context of Beck's theory, cognitive distortions occupy a central stage in depression, they are defined as systematic

errors in the perception and processing of information. Individuals with depression tend to be firm and inflexible in structuring their experiences, leading to interpretation errors with regard to personal performance and judgment of external situations. Beck, Rush, Shaw, and Emery (1979) were asserted the most common cognitive distortions in depressed patients into a typological system that includes, among others, arbitrary inference (formulating a conclusion in the absence of sufficient evidence), selective abstraction (tendency of the person to select proof of his/her poor performance), overgeneralization (tendency to consider that one negative performance or event will occur other times), and personalization (personal attribution, often negative). A larger series of distortions has been described by Beck and others. Distortions are a result of dysfunctional rules and assumptions, which are stable patterns acquired throughout the lifetime of a depressed individual. These rules and beliefs are sensitive to activation by primary sources such as stress and often lead to ineffective interpersonal strategies (De Oliveira, 2012).

Despite the fact that depression and anxiety disorders are different, patients with depression often experience symptoms similar to those of an anxiety disorder, such as irritability, nervousness, and sleeping and concentrating problems. But each disorder has its own causes and its own behavioral and emotional symptoms. Many people who develop depression have a history of an anxiety disorder earlier in life (Troxel, Kupfer, Reynolds, Frank, Thase, Miewald, and Buysse, 2012).

Although there is no evidence one disorder causes the other, but there is obvious evidence that many individuals suffer from both disorders. The comorbidity of anxiety and depressive disorders is one of the most consistently reported patterns of comorbidity, greater severity of anxiety symptoms is associated with an increased risk of

incompliance with treatment, a decreased response to acute antidepressant treatment, and a longer time to both response and remission (**Andreescu, Lenze, Dew, Begley, Mulsant, Dombrowski, and Reynolds, 2007; and Möller, Bandelow, Volz, Barnikol, Seifritz, and Kasper, 2016**).

The concept of stress puts additional problems in the study of negative affective conditions. In addition to precipitating episodes of anxiety and depression, stressful life events are often thought to lead to a characteristic stress response involving chronic arousal and impaired function. Considered as an affective or emotional state, the concept of a stress response has clear affinities with anxiety (**Lovibond, and Lovibond, 1995a; Gold, 2015; and Möller, et al., 2016**).

Another aspect that influences the mood and vice versa is self-efficacy which is the belief in one's own abilities to perform the actions that are needed to obtain a desired goal. Self-efficacy beliefs guide behavior both directly, and indirectly through personal goals, certain behavior outcome expectancies, and environmental influences. Low self-efficacy expectancies and low outcome expectancies can lead to low and apathy rates of initiations of behaviors, decreased interest and persistence in a task and feelings of worthlessness and inadequacy (**Bandura, 2012; and Maddux, 2013**).

Self-efficacy beliefs influences mood and performance in addition emotional states and performance attachments are important source of self-efficacy information. At least three types of self-efficacy beliefs influence depression: First, people may feel unable to attain standards of achievements or performance that would bring personal satisfaction. Second, people may believe that they are incapable of developing satisfying and supportive relationships with others. Third, they may believe they are unable to

control disrupting depression ruminations (**Bandura, 2012**).

Continuance commitment develops out of the perceived cost (benefit against loss), and requires that the employee should be aware of these benefits and losses. As well Continuance commitment is a readiness of a worker to be a part of an organization. Because of individual investment in the form of nontransferable investments such as close working associations with colleagues, funds after retirement, career savings and learned job expertise. They are unique to a specific organization, years of working in a specific organization, taking part in the community in which the owner is positioned, and other aids that make it too expensive for one to quit and look for service somewhere else (**Meyer, & Espinoza 2016**).

According to Bandura's social cognitive theory **Bandura (1977)**, self-efficacy might show a bidirectional association with depressive symptoms. This idea is supported by the stress generation theory of depression and the socio-cognitive theory of Bandura. In the stress generation theory of depression, people who develop symptoms of depression generate more interpersonal stressors compared to healthy people. Both individual characteristics, such as dysfunctional social problem-solving skills, cognitions and beliefs, as well as negative environments, such as a violent spouse or being poor, contribute to interpersonal stress (**Maddux, 2013; and Tak, Brunwasser, Lichtwarck-Aschoff, and Engels, 2017**).

Cognitive behavioral therapy (CBT) for depression is one the best-researched therapeutic strategy for any psychological disorder (**Sudak, 2012**). Meta-analyses have supported its efficacy for the treatment of mild, moderate or severe depression. Furthermore, CBT is just as effective as or even more so than psychopharmacological

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therapy or any other form of psychological intervention [e.g. supportive treatment or interpersonal therapy (IPT)]. An additional benefit of CBT has been confirmed in many treatment studies; it results in a more durable response compared to drug therapy and may be protective against relapse (**Abreu, Powell, and Sudak, 2012**).

As developed by **Aaron T. Beck**, cognitive behavioral therapy is a short-term focused psychotherapy for many psychological disorders, including depression and anxiety. The core of this therapy is on how the patients is thinking, behaving, and communicating in the present rather than on experiences of childhood (**Beck, 2011**). It posits that thoughts which are negative in content can give rise to negative emotions and physiological sensations. In turn, this can lead to engaging in unhelpful coping behaviors and the development of vicious problem cycles, culminating in a poor state of health (**Hansen, Daykin, and Lamb, 2010; and Currid, Nikc'evic', and Spada, 2011**). The object of CBT is to identify, understand and interrupt these vicious problem cycles to secure immediate benefit. Treatment goals directly target distressing symptoms, the re-evaluation of thinking patterns and beliefs, and the enhancement of helpful behavioral responses. CBT helps patients learn effective self-help techniques that are used in homework assignments that target changes in the way they think, feel, and behave (**Yoshinaga, Nosaki, Hayashi, Tanoue, Shimizu, Kunikata, and Shiraishi, 2015; and Hedayati, Daniel, Cohen, Comstock, Cukor, Diaz-Linhart, and Mehrotra, 2016**). Based on these theoretical assumptions, early cognitive behavioral treatments of depression sought to increase the frequency of engagement in activities generally thought to be pleasurable for decrease anxiety and stress level (**Zettle, and Hayes, 2016**).

The typical course of CBT for depression composes of three phases. The

first phase of treatment focuses on relief of symptom. The aim of this phase is to re-engage patients in their daily activity and to promote resumed functioning. The middle phase of treatment addresses cognitive change. In this phase patients learn to identify automatic thoughts, critically evaluate these thoughts and test alternative modes of thinking. The final phase focuses on maintenance of treatment effects and on prevention of relapse. In this phase, patients are motivated to challenge their underlying negative schemas by engaging in behavioral experiments that examine the veracity of the schemas as well as their adaptiveness (**Springer, Rubin, and Beevers, 2011; and Sim, Lau, Sim, Sum, and Baldessarini, 2016**).

### **Significance of the study:**

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MDD is associated with significant morbidity, mortality, disability, and suffering for patients and their families. Total cases of depressive disorder in Egypt were 2,995,824 in 2015 represented 3.5% of total population. The total estimated number of people living with depression increased by 18.4% between 2005 and 2015; this reflects the overall growth of the global population, as well as a proportionate increase in the age groups at which depression is more prevalent (**WHO, 2017**). Projections for the year 2020 show that MDD will be second only to coronary heart disease as a cause of illness burden worldwide (**Blumenthal, Babyak, Doraiswamy, Watkins, Hoffman, Barbour, and Hinderliter, 2007**).

Cognitive behavioral therapy CBT was shown to be effective as a first line intervention for depression. Moreover, it does not cause the potential side effects associated with common psychopharmacological drugs that may add to the already high pill burden for patients (**Hollon, and Ponniah, 2010**). Qualified psychiatric nurses have played a significant role in disseminating (CBT) especially in

psychiatric hospital, and numerous clinical trials have studied the effects of CBT conducted by psychiatric nurses. This talking therapy is patient-centered and individualized, with specific objectives of improving health behaviors and adherence to treatment by solving current problems and teaching patients skills to modify automatic/dysfunctional thinking and behavior (Yoshinaga, et al., 2015).

### **Aim of the study:**

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This study aimed to assess the effect of cognitive behavioral nursing intervention on cognitive distortions and self-efficacy among patients with first episode major depressive disorder.

### **Research hypotheses:**

Cognitive behavioral nursing intervention has positive effect on cognitive distortions and self-efficacy among patients with first episode major depressive disorder.

### **Subject and Methods**

#### **Research design:**

A quasi-experimental study design on one group pre/post assessment was utilized to achieve the aim of the study.

#### **Study setting**

The study was carried out at outpatient clinic, El-Abassia Mental Health hospital affiliated to ministry of health.

#### **Subjects:**

Purposive sampling technique was used. The subjects for the study were 45 adult patients with first episode major depressive disorder and who were available at the time of the study and fulfilled the following

criteria: free from medical or comorbid diseases, with no history of drug addiction, and didn't receive any previous psychotherapy sessions or psycho-education. The subjects represented 10% of the total patients with first episode major depressive disorder at the previous year "2016" based on the hospital medical records.

### **Tools of data collection**

The data was collected using a self-administered questionnaire sheets that included four sections as following:

#### **The first section:**

Patient's demographic characteristics such as age, gender, academic year, etc.

#### **The second section:**

**Depression, Anxiety and Stress Scale (DASS); Lovibond, & Lovibond, (1995b):** The DASS is a standardized 42-items questionnaire which includes three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three scales contains 14 items, divided into subscales of items with similar content. The depression scale assesses dysphoria, hopelessness, self-deprecation, devaluation of life, lack of involvement/interest, inertia, and anhedonia. The anxiety scale assesses autonomic arousal, situational anxiety, skeletal muscle effects, and subjective experience of anxious affect. The stress scale (items) is sensitive to levels of chronic non-specific arousal. It assesses nervous arousal, difficulty in relaxation, and being easily agitated/upset, over-reactive/irritable and impatient. Each of these scales is rated on a four-point likert scale as follows: 0 =did not apply to me at all; 1=applied to me to some degree, or some of the time; 2 =applied to me to a considerable degree or a good part of time; and 3=applied to me very much or most of

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the time. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items. The severity-rating index is shown below:

Level	Depression	Anxiety	Stress
Normal	0 – 9	0 - 7	0 – 14
Mild	10 – 13	8 – 9	15 – 18
Moderate	14 – 20	10 – 14	19 – 25
Severe	21 – 27	15 – 19	26 – 33
Extremely Severe	28+	20+	34 +

In the present study, the internal consistencies (Cronbach alphas) of the DASS were proven to be high for each scale: Depression 0.89; Anxiety 0.84; and Stress 0.88, as well, Pearson correlations coefficient (r) were proven to be high for each scale: Depression 0.83; Anxiety 0.90; and Stress 0.86.

### The third section:

**Inventory of Cognitive Distortions ICD; Yurica (2002)**, a standardized 69-items self-report questionnaire designed for use in trans diagnostic clinical populations, used to assess cognitive distortions. The ICD contains the following 11 scales, each tapping a distinct cognitive distortion: (1) externalizing of self-worth (e.g., “I need others to approve of me in order to feel that I am worth something”), (2) fortune telling (e.g., “I act as if I have a crystal ball forecasting negative events in my life”), (3) perfectionism (e.g., “It is important to strive for perfection in everything I do”), (4) comparison to others (e.g., “Most people are better at things than I am”), (5) emotional reasoning (e.g., “My feelings are an accurate reflection of the way things really are”), (6) magnification (e.g., “I blow things out of proportion”), (7) labeling (“I call myself negative names”), (8) emotional decision making (e.g., “I go with my gut feeling when deciding something”), (9) arbitrary inference (e.g., “I jump to conclusions without considering alternative points of view”), (10)

minimization (“I underestimate the seriousness of situations”), and (11) mind-reading (e.g., “I believe I know how someone feels about me without him/her ever saying so”). Each item is rated on a 5 points Likert Scale from 1 (“never”) to 5 (“always”). The ICD is scored by summing the highest ratings for each of the 69 items, resulting in a total ICD score ranging from 69 to 345. The higher the ICD total, the higher the total frequency of reported cognitive distortions.

ICD Subscales	Less frequent	Frequent
Discounting the Positive / Personalization	14-47.6	47.7-70
Magnification	7-23.8	23.9-35
Fortune-Telling	5-17	17.1-25
Externalization of Self-Worth	5-17	17.1-25
Perfectionism	3-10.2	10.3-15
Absolutistic / Dichotomous Thinking	4-13.6	13.7-20
Emotional Reasoning	3-10.2	10.3-15
Minimization	3-10.2	10.3-15
Comparison to Others	2-6.8	6.9-10
Should Statements	3-10.2	10.3-15
Catastrophizing	2-6.8	6.9-10
Emotional Reasoning and Decision Making	2-6.8	6.9-10
<b>TOTAL ICD</b>	<b>69-234.6</b>	<b>234.7-245</b>

In the present study, internal consistency reliability and Pearson correlations coefficient (r) of the ICD as a whole was proved to be high (Cronbach alphas = .86 and r=.84). Internal consistency for the individual scales ranged from .71 to .89, as well, Pearson correlations coefficient (r) were proven to be high for each scale ranged from .83 to .91

### The fourth section:

**Generalized Self-Efficacy scale-Schwarzer, & Jerusalem, (1995)**: it developed to assess the strength of a person’s belief in his or her ability to respond to novel or difficult situations and to deal with any associated obstacles or setbacks. The scale is

self-administered and consists of 10 items. Scores for each item is rated in range from 1 (“not at all true”) to 4 (“exactly true”). Scores are summed across the 10 items to give a total score, with a possible range of 10 to 40. Higher scores indicate greater confidence in generalized self-efficacy.

Level	Low	High
self-efficacy	10 – 28	28.1 - 40

High reliability, stability, and construct validity of the GSE scale were confirmed in earlier studies. The scale was found to be configurally equivalent across 28 nations, and it forms only one global dimension (Schwarzer, and Warner, 2013). In the present study, Cronbach alpha obtained for the GSE scale was .87 and Pearson correlations coefficient (r) was .91

### Operational Design

The operational design for this study included preparatory phase, pilot study, fieldwork, ethical considerations.

#### Preparatory phase:

It included reviewing past, current, local and international related literature and theoretical knowledge of various aspects of cognitive behavior therapy, thought distortions, self-efficacy, and the role of psychiatric nurse by using books, articles, periodicals and other available resources through the Internet search.

The researchers prepared and designed tools of data collection. Then the standardized tools were translated into Arabic language and back translated into English language by language experts, and any discrepancies found between the back translation and the original tools were taken as an indication of translation error.

### Tool validity and reliability:

It was ascertained by a group of experts from Psychiatric Nursing, their opinions were elicited as regards to the tool format layout, consistency, knowledge accuracy, relevance, and competencies as well the scoring system. Internal consistency (Cronbach alpha) and Pearson correlation coefficient (r) were tested for each tool.

### Pilot study:

The pilot study was carried out in the second week of June 2017. It was conducted on a ratio of 10 % of the study sample size “5 cases” who were later excluded from the study subjects and substituted with other 5 cases who fulfilled the previously mentioned criteria, to evaluate the clarity, applicability and feasibility of the research tools and to estimate the time needed for data collection. The tool was finalized based on the results of the pilot.

### Field work:

At the beginning, the researchers assessed needs of patients with first episode major depressive disorder (pre-test) at the period from the beginning of the third week to the end of the fourth week of June 2017, and based on the assessment findings, the cognitive behavioral nursing program was developed by the researchers and revised by a specialized psychiatrist and professor of psychiatric/mental health nurse, before its application to the psychiatric patients, in order to assure the patient’s safety from medical and nursing aspects at the period from the beginning of the first week to the end of the second week of July 2017.

Implementation of the cognitive behavioral nursing program consumed about three months from the beginning of the third week of July 2017 to the end of third week of October 2017. Post-test was done at the

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period from the beginning of the fourth week of October to the end of the first week of November 2017.

The researchers met with each patient individually and introduced themselves; explained the purpose and nature of the study; and ensured the confidentiality of data. Patients were asked if they were interested and agreed to participate in the study. After that, the questionnaire forms were distributed to each patient individually and they were asked to complete it by selecting only one response that reflects the actual situation. The researchers asked the patients about any difficulties that faced them during answering the questionnaires and offered help. The questionnaire took about (20-30) minutes. The patient with or without his/her relative was informed to be seen three times/month on (Sunday, Wednesday, and Thursday) and sometimes according to participants available time for meeting and each session would be around 2 hours. The researchers informed the participants that their progress, home assignments, and any faced difficulties will be followed up through phone contact until the next meeting.

The researchers started cognitive behavioral nursing intervention sessions: the theoretical part included psycho-education regarding the magnitude of major depressive disorder, different treatment modalities, and relapse prevention. The practical sessions dealt with: scheduling the patients` daily activities to enhance sense of mastery and pleasure; monitoring thought pattern; behavioral experiments to test the irrational thoughts; cognitive restructuring; problem solving steps; social skills training; anger and stress management; and compliance to treatment. The content of cognitive behavioral nursing intervention program was achieved through 9 sessions. The researchers used different teaching methods and media such as; lectures discussions, brain storming discussion, demonstration, real life situations, and colored handouts. In addition, different

CBT tools as journaling, play script until the end, unrevealing cognitive distortions, exploring the cause of faulty thinking, reframing and restructuring thoughts, homework assignment, worksheets and exercises were used.

### **Administrative Design**

Official letters were issued from the faculty of nursing, Ain Shams University, to the hospital director of El-Abassia Mental Health Hospital, explaining the aim of the study and requesting their permission for data collection.

### **Ethical considerations**

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At the initial interview, each patient was informed about the aim and nature of the study, and the researchers emphasized that participation would be voluntary; hence every patient had the right to participate or refuse to be included in the work, and they were informed about the right to withdraw at any time without giving any reasons, and without any consequences. The consent for participation was taken orally. In addition, the confidentiality of any gathered data was assured, explained and also printed in the questionnaire as follows: "collected information will be used only for the purpose of the study without referring to the personnel's participation through anonymity of the subjects that will be assured by the coding of all data".

### **Statistical Design**

The statistical analysis of data was done by using computer software for excel program and statistical package for social science SPSS version 20.0. Data were presented using descriptive statistics in the form of frequencies and percentages for categorical data. Continuous variables were summarized as means and standard deviations (SD), and paired sample T. Test was used to identify the significance in group



before and after cognitive behavioral nursing intervention implementation, significant level value was set at  $\leq 0.05$ .

## Results

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**Table (1):** data analysis of 45 patients` obtained responses revealed that slightly more than three fifths (62%) of the study sample were females; more than one third of the studied sample (35.6%) felt at age group between 25 to less than 30years old; and less than half (48.9%) of the patients were single. Regarding residency less than two thirds (64.4%) of the patients lived in urban areas, as well as three fifths (60%) of the patients had finished university education. In addition, more than half of studied patients (55.5%) were employed; as well the majority (82.2%) of the patients had inadequate monthly income.

**Table (2):** the analyzed data revealed that, there were highly statistically significant differences between pre- and post- cognitive behavioral nursing intervention regarding levels of depression, anxiety, and stress of patients with first episode major depressive disorder, in which  $t= 17.53, 18.17, \text{ and } 14.13$  at  $P= .000, .000, \text{ and } .000$  respectively.

**Table (3):** regarding cognitive distortions, the analysis of the data showed that, there were highly statistically significant differences between pre- and post- cognitive behavioral nursing intervention regarding different types of cognitive distortions: discounting the positive/personalization, magnification, fortune-telling, externalization of self-worth, perfectionism, absolutistic/dichotomous thinking, emotional reasoning, minimization, comparison to others, should statements, catastrophizing, and emotional reasoning and decision making of patients with first episode major depressive disorder, as well as total score of cognitive distortions in which  $t= 22.89, 17.57, 22.22, 20.13, 27.68, 21.56, 35.81, 22.53, 18.09, 12.57, 28.40, 22.73, \text{ and } 64.450$  at  $P= .000, .000, .000, .000, .000, .000, .000, .000, .000, .000, .000, \text{ and } .000$  respectively.

**Table (4):** regarding patients' level of self-efficacy, data analysis showed that there is a highly statistically significant difference between pre- and post-cognitive behavioral nursing intervention regarding levels of self-efficacy in which  $t= 16.68$  at  $P= .000$ .

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**Table 1: Demographic characteristics of patients with first episode major depressive disorder (n=45).**

Parameter	N	(%)
<b>Gender</b>		
• Male	17	(37.8)
• Female	28	(62.2)
<b>Age</b>		
• Less than 20	1	(2.2)
• 20 to less than 25	12	(26.7)
• 25 to less than 30	16	(35.6)
• 30 to less than 35	4	(8.8)
• 35 to 40	7	(15.6)
• More than 40	5	(11.1)
<b>Marital status</b>		
• Single	22	(48.9)
• Married	19	(42.2)
• Divorced	4	(8.9)
<b>Educational level</b>		
• Primary	2	(4.4)
• Secondary/diploma	16	(35.6)
• University	27	(60.0)
<b>Residence</b>		
• Urban	29	(64.4)
• Rural	16	(35.6)
<b>Occupation</b>		
• Employed	25	(55.5)
• Unemployed	20	(44.5)
<b>Income</b>		
• Adequate	8	(17.8)
• Inadequate	37	(82.2)

**Table 2: Comparison between the levels of depression, anxiety, and stress pre- and post-cognitive behavioral nursing intervention application among patients with first episode major depressive disorder (n=45).**

DASS Subscales	Pre-intervention Mean±SD	Post-intervention Mean±SD	t test	P value
Depression (max = 42)	27.56 ± 3.8	18.58 ± 3.5	17.53	.000
Anxiety (max = 42)	21.44 ± 2.1	13.80 ± 2.1	18.17	.000
Stress (max = 42)	29.76 ± 4.6	20.20 ± 3.2	14.13	.000

**Table 3: Comparison between different of types cognitive distortions pre- and post-cognitive behavioral nursing intervention application among patients with first episode major depressive disorder (n=45).**

ICD Subscales	Pre-intervention Mean±SD	Post-intervention Mean±SD	<i>T test</i>	<i>P</i> value
Discounting the Positive / Personalization (max = 70)	55.73±7.2	35.40±6.6	22.893	.000
Magnification (max = 35)	27.96±4.1	17.24±3.1	17.577	.000
Fortune-Telling (max = 25)	19.31±2.1	10.73±2.2	22.224	.000
Externalization of Self-Worth (max = 25)	18.60±1.8	11.18±2.1	20.138	.000
Perfectionism (max = 15)	10.4±1.5	7.62±1.4	27.685	.000
Absolutistic / Dichotomous Thinking (max = 20)	14.47±2.0	9.84±2.3	21.565	.000
Emotional Reasoning (max = 15)	11.09±1.4	7.07 ±1.4	35.811	.000
Minimization (max = 15)	9.80±1.5	5.89±1.2	22.534	.000
Comparison to Others (max = 10)	7.49±1.3	4.60±1.2	18.099	.000
Should Statements (max = 15)	11.04±1.6	6.09±1.5	12.575	.000
Catastrophizing (max = 10)	7.93±.86	4.49±1.0	28.407	.000
Emotional Reasoning and Decision Making (max = 10)	7.84±.92	4.82±1.0	22.739	.000
TOTAL ICD (max = 345)	201.7±26.8	124.97±25	64.450	.000

**Table (4): Comparison between level of self-efficacy pre- and post-cognitive behavioral nursing intervention application among patients with first episode major depressive disorder (n=45).**

The General Self-Efficacy Scale	Pre-intervention Mean±SD	Post-intervention Mean±SD	<i>t test</i>	<i>P</i> value
Self-efficacy (max = 40)	20.93±2.5	31.11±3.8	16.68	.000

### Discussion

The findings of the current study supported the study hypothesis that cognitive behavioral nursing intervention had a positive effect on cognitive distortions and self-efficacy among patients with first episode major depressive disorder, all the study variables showed improvement with significant differences between pre and post-test scores.

The results of the present study revealed that, more than three fifths of the study sample were females; this may contribute to fluctuations in female hormonal which could be considered a trigger for depression, especially during puberty, prior to menstruation, following child bearing period and at perimenopause. Women also experience specific types of depression-related to illness, such as postpartum blues and depression, premenstrual dysphoric disorder, and postmenopausal anxiety and depression. Evidence supports that, before puberty boys and girls have similar rates of depression; the rate is perhaps even higher

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for boys, but more girls than boys are depressed by ages 13 to 15. In adulthood, twice as many women as men are depressed, and by the ages older than 65 years, both men and women show decrease in the rates of depression, and the prevalence becomes similar between them (**Hyde, Mezulis, and Abramson, 2008**; and **Girgus, Yang, and Ferri, 2017**).

This is congruent with **Albert, (2015)**, in his study entitled “Why is depression more prevalent in women?” and stated that the prevalence of major depression is higher in women than in men; in 2010 its global annual prevalence was 5.5% and 3.2%, respectively, representing a 1.7-fold greater incidence in women. This result comes in accordance with **Seedat, Scott, Angermeyer, Berglund, Bromet, Brugha, & Karam, (2009)**; **Girgus, and Yang, (2015)**; and **Picco, Subramaniam, Abdin, Vaingankar, and Chong, (2017)**, who reflected that, the prevalence of MDD is higher among women compared to men.

This is also in accordance with **Sassarini, (2016)**, who carried out a study entitled “Depression in midlife women” and stated that depression is often twice times higher among women than men, and showed that among women, depression is the leading cause of disease-related disability.

The result of the present study showed that less than two thirds of the studied sample felt at age group between 20 to less than 30 years old; this result may be due to economic and political situation in Egypt as well as transitional periods after the revolutions led to lack of work opportunities as less than half of the studied patients were unemployed, although three fifths of the studied patients were finished university education, which in turn affect their chances for marriage, as revealed from the current study results about half of them were single, and the monthly income was inadequate as stated by the majority of them, that led to loss of hope,

lack of self-confidence and the appearance of symptoms of depression on most young people. These findings support the link between unemployment duration and poor psychological health: the longer a person is unemployed, the worse health becomes.

These results come in accordance with **Klein, Glenn, Kosty, Seeley, Rohde, and Lewinsohn, (2013)** who stated, although that MDD can appear at any age between early childhood and older adulthood, its incidence peaks in young adulthood. National and cross-national epidemiological studies report that the first onset of MDD most frequently occurs in the 20s to early 30s.

Results from a study carried out by **Wang, Schmitz, and Dewa, (2010)**, and entitled “Socioeconomic status and the risk of major depression: the Canadian National Population Health Survey”, revealed that low education level and financial strain were associated with an increased risk of major depressive episode (MDE) in participants who worked in the past 12 months.

This is also in accordance with **Schubert, Süßenbach, Schäfer, and Euteneuer, (2016)**, who studied the effect of subjective social status (SSS) on depressive thinking and stated that both objective and subjective measures of social status are strongly related with depression. Cognitive mechanisms such as depressive cognitions, rumination, and a negative cognitive style are seen as both concomitant and antecedent to depression. Low status participants exhibited higher levels of depressive cognitions and rumination compared to their high status counterparts, but both groups did not differ regarding their cognitive style.

A study entitled “The role of socio-economic status in depression: results from the COURAGE (aging survey in Europe)” concluded that low socio-economic status (SES) has been found to be associated with a higher prevalence of depression. The

socioeconomic status index (composed of education and income) appears to predict symptoms of depression across European countries (Freeman, Tyrovolas, Koyanagi, Chatterji, Leonardi, Ayuso-Mateos, Tobiasz-Adamczyk, Koskinen, Rummel-Kluge, and Haro, 2016).

As well a study entitled “Associations between unemployment and major depressive disorder”, indicated that self-reported depressive moods occurred more often among persons unemployed for a long-term rather than a short-term, the unemployed persons have poorer mental health than the employed, becoming unemployed raised risk of depression symptoms 12 months later, whereas gaining employment reduced risk of symptoms, and depression may result in raised risk of subsequent unemployment (Jefferis, Nazareth, Marston, Moreno-Kustner, Bellón, Svab, and Vicente, 2011).

The present study revealed that, there were highly statistically significant differences pre and post cognitive behavioral nursing intervention application regarding the levels of depression, anxiety, and stress among patients with first episode major depressive disorder. These results may be due to that the interventional program used well-structured techniques, varieties of sessions, and patients` commitment to the given instructions and assignments. The clients exposed from the beginning to psycho-educative session about the nature of disease and how to control disease symptoms and prevent relapse by adhering to treatment plan, as well they received frequent sessions concerning scheduling the activities of daily living to overcome the anergia which enhance the sense of mastery, and sense of pleasure by following the instructions and carryout home assignment. They also received sessions concerning social skills training: to develop communication and assertiveness skills that enabled them to deal with social network where they live and deal

with everyday situations; sessions about problem solving steps and skills; stress management sessions including performance of different relaxation techniques; and anger management session for training them skills to deal with anger provoking situations. Another factor that has a role in decreasing anxiety and stress symptoms is the reduction of rumination; because rumination causes individuals to have feelings of minimal control over their lives and these feelings are related to increased anxiety.

These results are in consistent with previous studies (Butler, Chapman, Forman, and Beck, 2006; Nordahl, 2009; and Ashouri, Vahid, Gharaee, and Rasoulia, 2013) showing that cognitive-behavioral therapy is effective on improving symptoms of anxiety through reducing cognitive biases and dysfunctional thoughts.

This is in accordance with Shah, Torres, Kannusamy, Chng, He, HG., and Klainin-Yobas, (2015), who mentioned that, participants who completed virtual reality-based stress management program had significantly lowered subjective stress ( $t = 6.91, p < 0.001$ ), depression ( $t = 5.62, p < 0.001$ ), and anxiety ( $t = 5.54, p < 0.001$ ); Participants' feedback on the program was positive.

This also in line with Ashouri, et al., (2013), who concluded that, all the participants in both Meta-Cognitive and Cognitive-Behavioral Therapy groups demonstrated improvement in depression, anxiety, dysfunctional attitude and ruminative response, as well all the patients showed significant improvement at post-treatment phase.

The analysis of the data showed that, cognitive behavioral nursing intervention was effective in reducing dysfunctional beliefs as there were highly statistically significant differences between pre and post cognitive

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behavioral nursing intervention regarding different types of cognitive distortions: discounting the positive personalization, magnification, fortune-telling, externalization of self-worth, perfectionism, absolutistic/dichotomous thinking, emotional reasoning, minimization, comparison to others, should statements, catastrophizing, and emotional reasoning and decision among patients with first episode major depressive disorder, as well as total score of cognitive distortions. These results due to the efficiency of cognitive behavioral nursing intervention program and the patients` commitment, as the patients received frequent sessions for exploring their core beliefs, dealing, and restructuring faulty and distorted thoughts, by using different tools, techniques, and worksheets as well as home assignments.

This comes in line with a number of previous studies (**Driessen, Van, Schoevers, Cuijpers, van Aalst, Don, and Dekker, 2007; Hassett and Gevirtz, 2009; Leahy, Holland, and McGinn, 2011; and Ashouri, et al., 2013**), who supported that the major assumption of this approach is that individuals become at risk for depression by experiencing dysfunctional schemas and/or core negative beliefs about self, future, and the world. As CBT tries to modify and control these thoughts and thinking errors by using cognitive strategies such as identification of automatic negative thoughts and cognitive biases, assessment and questioning the evidences, and exploration contradictory evidences.

These results is also in accordance with Beck`s model, these beliefs constitute a cognitive vulnerability (diathesis) to depression, the beliefs are activated by adverse life events stress to produce event-specific negative automatic thoughts about the self, the world and the future, according to Beck`s cognitive triad, which in turn lead to negative mood. Following this model, cognitive behavior therapy aims to change patients, thought patterns in order to facilitate

mood change and improved coping with stress (**Beck, 1991**).

Overall, the extant research supports the use of cognitive behavior therapy as an effective treatment for depression and relieve signs and symptoms of disease, as **Huang, Liu, Tsai, Chin, and Wong (2015)**, stated that immediately after a 12-week CBT intervention, there were significant decreases in depressive symptoms, better quality of life and more perceived social support amongst the CBT group compared to the control group.

This comes in accordance with **Lorenzo-Luaces, German, & DeRubeis, (2015)**, who developed a framework within which the possible links between cognitive procedures, cognitive change, and symptom change can be considered, and conclude that cognitive procedures are effective in alleviating symptoms of depression, automatic thoughts cognitive change, and that dysfunctional attitudes regardless of how it is achieved, contributes to symptom change, a pattern of findings that lends support to the cognitive theory of depression.

Also, this result is to some extent supported with **Hofmann, Asnaani, Vonk, Sawyer, & Fang (2012)**, who have demonstrated that meta-analyses found CBT to be equally effective in comparison to other psychological treatments. Additionally, **Tolin (2010)**, showed CBT to be superior to psychodynamic therapy at both post-treatment and at 6 months follow-up,

The current study was in line with **Hayes, Villatte Levin, and Hildebrandt, (2011)**, as they mentioned that therapists used CBT techniques to help patients challenge their patterns and beliefs and replace errors in thinking, based on many foundations the most important of which is the replacement of cognitive distortions, such as "excessive generalization, magnification, enlarging negatives, minimizing positives

and disasters" with more realistic and effective ideas, thus reducing emotional and psychological distress - defeat behavior.

Regarding patients' level of self-efficacy, data analysis showed that there was a highly statistically significant difference between pre- and post-cognitive behavioral nursing intervention regarding level of self-efficacy. This result may be due to the effect of the program that aimed to help the patients to replace the patterns of behaviors that were based on negative thinking to more realistic thoughts. This is supported by **Bandura, (2012)**, who stated that low self-efficacy expectancies and low outcome expectancies can lead to apathy and low rates of initiations of behaviors, lack of interest and persistence in a task and feelings of worthlessness and in adequacy.

This is also in line with **Zlomuzica, Preusser, Schneider and Margraf (2015)**, who stated that self-efficacy has been proposed as an important element of a successful cognitive behavioral treatment (CBT) through positive changes in perceived self-efficacy lead to improved adaptive emotional and behavioral responding in the context of anxiety-provoking situations. Furthermore, a positive influence of increased self-efficacy on cognitive and behavior functions

### **Conclusion**

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Cognitive behavioral nursing intervention has positive effect on cognitive distortions and self-efficacy among patients with first episode major depressive disorder.

### **Recommendation**

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Based on the study findings, we suggest that:

1. It is important to construct integrated approach by incorporating non-drug therapy (cognitive behavioral nursing intervention) along with psychopharmacological therapies in the management of major depressive disorder.
2. Providing training programs for highly qualified nurses regarding delivering cognitive behavioral nursing intervention sessions for patients with major depressive disorder.
3. Future follow-up research should be done to determine if attending and compliance with cognitive behavioral nursing intervention program have positive effect on quality of life for these patients and decrease the disease relapse rate
4. Regarding small sample size of this study, we recommend investigators to conduct similar studies with larger sample size.

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