

## ORIGINAL ARTICLE

# Effects of Cognitive Behaviour Therapy on Anxiety and Depression Reduction among Women with Surgical Menopause: A randomized Controlled Trial

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## ABSTRACT

**Introduction:** Hysterectomy among premenopausal women is a matter of concern as it exposes women to anxiety and depression. There are a wide variety of conventional treatments for these patients to reduce menopausal anxiety and depression such as Cognitive Behaviour Therapy (CBT). **Methods:** A randomized controlled trial was carried out on 230 females aged 25 -55 years undergoing hysterectomy. After collecting complete history, the participants were allocated randomly into two groups. Participants were allocated to the experimental (115) and control (115) group in the ratio of 1:1. The anxiety and depression were descriptively measured using Beck's Anxiety and Depression inventory. Later, CBT, including six procedures, were carried out for the experimental group in six sessions, for the period of seven months. **Results:** In the pretest, the experimental group anxiety scores were 5.22% (low), 39.13% (moderate), and 55.65% (high); while 4.35% (low), 43.48% (moderate), and 52.17% (high) for the control. Depression scores in the experimental group showed none within the normal score, 3.48% for borderline, 15.65% for mild, 73.91% for moderate, and 6.96% for severe levels; while 4.35% for borderline, 18.26% mild, 72.17% moderate, and 5.22% for severe levels. **Conclusion:** The CBT is effective in reducing the anxiety and depression among women with surgical menopause. CBT was found to the improved psychological profile of these patients.

**Keywords:** Cognition, Anxiety, Depression, Surgical menopause, Psychological profile

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## INTRODUCTION

Menopause is a natural stoppage of the menstrual cycle that occurs in women's midlife. It often occurs in women between the period of 45 -50 years (1). During menopause, women come across significant changes that include psychological, emotional, and physical health. Surgical menopause is an invasive emergency procedure in which the female gonads are removed (Oophorectomy) (2). In these artificially induced conditions, the mortality rate is much higher (16.8%) than natural menopause (13.2%) (3). Surgical menopause is often executed to avoid ovarian cancers,

pelvic inflammatory disease, heavy bleeding, and uterine prolapse in reproductive women (4). Surgical menopause is mainly characterized by a deficiency of female sex hormones (Estradiol, progesterone) because of either complete removal or sudden discontinuation of ovarian function. In particular, the women experience a substantial reduction in bone density, libido, and vascular compliance. So, surgical menopause increases the risk of osteoporosis, ischemic heart disease, cognitive impairment, and hormonal imbalance (5, 6). Therefore, to prevent accidental or intentional manifestations after surgical menopause, the European Society for Medical Oncology, Gynecological Oncology, and Radiotherapy (ESMO-ESGO-ESTRO) has recommended a set of guidelines in 2018 for the decision on oophorectomy (7). Unfortunately, emotional alterations that accompany the longstanding lack of ovarian hormones may destabilize women with unstable psychiatric axes and

severe anxiety that significantly impacted their quality of life. Depression seems to increase due to the decline in estrogen levels and its impact on other neurotransmitters (8).

Hormone replacement therapy (HRT) has been administered and considered a gold standard regimen to reduce the post-menopausal consequences (9, 10). Even though there is huge progress in various therapeutic agendas to ameliorate psychiatric indications accompanying surgical menopause, but there are a shortage of effective treatment to condense symptoms of menopause (11). The definite therapeutic schedules are partially operative, but they may have side effects and limit their use in sensitive women. In consequence, substitute therapies based on lifestyle changes, stress reduction techniques are available to handle the menopausal symptoms (12). Most of these interventions focused on finding new alternate non-invasive therapies to explore the beneficial outcome. One of the applicable interventions among nurses for post-surgical cases while implementing care for surgical menopause women is Cognitive Behaviour Therapy (CBT) which is a highly beneficial and viable method to correct these symptoms. Over recent years, CBT has become more and more popular among clinicians and the general public. The short-term, structured nature of the treatment made it particularly amenable to empirical investigation, and it has accumulated an impressive research base. CBT practices make a person more rational, learn to control thinking, change self-belief, help to calm, and relax (13). In the future, CBT can be one of the best interventions and influence the psychological, emotional, and social well-being of women with surgical menopause. Various studies have highlighted the barriers faced by women in accessing health care services (14, 15). However, with increasing irrational interventions, it has become necessary to study quality and cost-effective lifestyle changes. Hence, the authors aimed to conduct cognitive behavioural therapy interventions to reduce anxiety and depression among women with surgical menopause.

## MATERIALS AND METHODS

### Study population

A randomized controlled trial of 230 women with surgical hysterectomy between 25 to 55 years of age has participated in the study. The complete intervention protocol is reviewed and accepted by the Institutional Ethics committee of the host institute. A sample size of 230 women were calculated based on the average standard deviation of the previous study and a 10% attrition rate was also considered during the process. Participants were subjected to all general medical examinations, and history was obtained before inclusion into the study. Participants were excluded if they had any well-known psychiatric issue, a history of hysterectomy with cancer, and were under HRT treatment. Participants who fulfilled inclusion criteria were explained regarding the

nature and purpose of the study, and informed consent was obtained as per the Declaration of Helsinki 1975 and later amendments.

### Allocation of participants

By simple randomization (lottery method), participants were randomly allocated to the experimental and control group in a 1:1 ratio. The participants who met the criteria were included in the study and later randomly allocated into 2 groups i.e., (n= 115) CBT intervention group and (n=115) control group.

### Intervention protocol

Cognitive-behavioral therapy (CBT) is a process that aims to reduce distress and dysfunction psychologically by exploring the user's integration of thoughts, feelings, and behavior with more positive and acceptable conduct that leads to the alleviation of the psychiatric problems in a wide variety of conditions (16, 17). Cognitive Behaviour Therapy was carried out for 9 months among the groups with all the six sessions such as Psychoeducation, Formulation, Behaviour-Emotional-Cognition connection, Behaviour Therapy, Cognitive restructuring, and Relapse prevention (18). Each session was taught to them daily for 6 days and it was combined with group and individual sessions based on the nature and need of the technique used. Each group of participants was instructed to practice the sessions from day 1 for 2 months. Direct and telephonic monitoring of the participants was done during this period. Along with CBT sessions for each group, posttest was also performed simultaneously for the groups who completed 2 months of practice. Post-test for the control group was done for 24 days on the 9th month with the same tool.

### Outcome measurement

All the demographic variables were obtained from each participant. The data collection was executed after explaining the protocol. Anxiety and depressive score were collected using Beck's Depression Inventory, Beck's Anxiety inventory questionnaires, respectively, before and after the intervention. The trained faculty did the data collection from the Psychiatry Department of the host institute.

### Statistical analysis

The data sets were expressed in a descriptive and inferential manner. All the data sets were analyzed using SPSS (Ver. 16). The normality of data was tested using the Smirnov Kolmogorov test. As the data sets were skewed, non-parametric tests were applied to determine the differences between pre-post-intervention.

### Ethical clearance

The study protocol was approved by the Ethics Committee under Institutional Ethics Committee, Narayana College of Nursing, Nellore, Andhra Pradesh, India (File No 09/ Ph.D (N)/LU/2019 dated 07th February 2019).

## RESULTS

Among the 230 enrolled participants, two groups were formed as experimental (115) and control (115) groups. In the demographic variables, those groups who had a range of 1-3 children, 79.13% of women had surgical menopause were in the experimental group and 86.96% control group. The participants in both groups were aged between 25 – 55 years. Among the participants, 53.91% of women with surgical menopause, in the experimental group were between 37-42 years. In the control group, around 62.6% of postmenopausal women were between 37-42 years. About 61.74% of women with surgical menopause in the experimental group had primary education. In the control group, around 61.74% of postmenopausal women had primary education. About 65.21% of women with surgical menopause in the experimental group were housewives whereas in the control group around 72.17% of postmenopausal women were housewives. Around 90.43% of women with surgical menopause in the experimental group were married, whereas in the control group around 95.65% of postmenopausal women were married. Nearly 47.83% of women with surgical menopause had heavy menstrual bleeding and in the control group, 60.87% of women with surgical menopause had heavy menstrual bleeding as a reason for surgical menopause (Table I).

The pretest level of anxiety between experimental and control groups were measured, in the experimental group, 5.22% of them are having a low level of anxiety, 39.13% of them are having a moderate level of anxiety and 55.65% of them are having potentially concerning levels of anxiety. In the control group, 4.35% of them are having a low level of anxiety, 43.48% of them are having a moderate level of anxiety and 52.17% of them are having potentially concerning levels of anxiety (Figure 1). Statistically, there is no significant difference between the experimental and control group ( $p \leq 0.05$ ). Posttest level of anxiety between experimental and control group shows, in experimental group, 52.17% of them are having low anxiety, 31.30% of them are having moderate anxiety and 16.52% of them are having potentially concerning levels of anxiety. In the control group, 6.09% of them are having a low level of anxiety, 45.22% of them are having a moderate level of anxiety and 48.70% of them are having potentially concerning levels of anxiety (Figure 2). There was a significant difference between the experimental and control group in the posttest (Table II). Pretest levels of depression between the experimental and control groups show that in experimental group, none of them are normal, 3.48% of them are having a borderline level of depression, 15.65% of them are having mild mood disturbance or mild depression, 73.91% of them are having moderate depression and 6.96% of them are having severe depression. In the control group, 4.35% of them are having borderline depression, 18.26%

**Table:1 Demographic variables among women in both groups.**

	Experimental group		Control group	
	No. of. women with surgical menopause (115)	Percentage (%)	No. of. women with surgical menopause (115)	Percentage (%)
<b>Age</b>				
25 -30	6	5.22	3	2.61
31 -36	30	26.09	27	23.48
37 -42	62	53.91	72	62.60
43 -48	12	10.43	10	8.70
49 -55	5	4.35	3	2.61
<b>Level of Education</b>				
No education	12	10.43	9	7.83
Primary education	71	61.74	71	61.74
Secondary education	21	18.26	24	20.86
Graduate	6	5.22	8	6.96
Post graduate	5	4.35	3	2.61
<b>Occupational status</b>				
Coolie	25	21.74	25	21.74
Housewife	75	65.21	83	72.17
Government employee	5	4.35	3	2.61
Private employee	10	8.70	4	3.48
<b>Marital status</b>				
Married	104	90.43	110	95.65
Single	0	0.00	0	0.00
Divorced	2	1.74	2	1.74
Widow	9	7.83	3	2.61
<b>Parity</b>				
Nullipara	7	6.09	3	2.61
1-3 children	91	79.13	100	86.96
More than 3 children	17	14.78	12	10.43
<b>Reason for surgical menopause</b>				
Heavy bleeding	55	47.83	70	60.87
Fibroid	29	25.22	23	20.00
Family history of ovarian cancer	8	6.96	5	4.35
Pelvic inflammatory disease	3	2.61	3	2.61
Endometriosis	4	3.48	7	6.09
Uterine prolapse	16	13.91	7	6.09

of them are having mild mood disturbance or mild depression, 72.17% are having moderate depression and 5.22% are having severe depression as shown in (Figure 3). Statistically, there is no significant difference between the experimental and control groups in the pretest. In the posttest, the experimental group shows a notable improvement as, 47.83% of them normal, 35.65% of them borderline depression, 16.52% of them mild depression, and none of them are having moderate

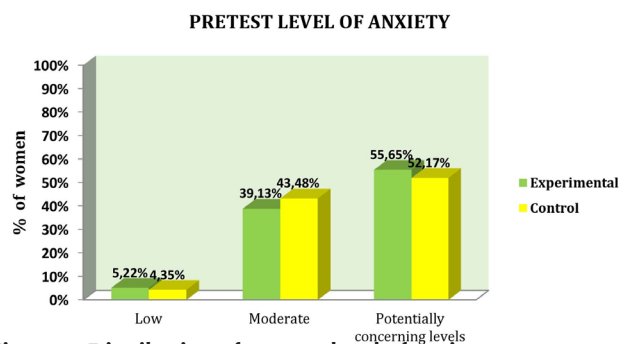


Figure 1: Distribution of pre-test level of anxiety among women with surgical menopause

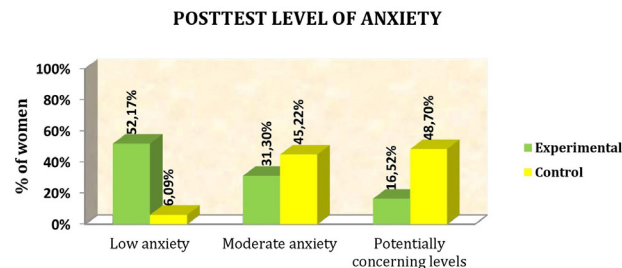


Figure 2: Distribution of post-test level of anxiety among women with surgical menopause

Table II: pretest and posttest level of anxiety among women with surgical menopause

Level of Anxiety	Experimental				Control				Chi square test
	Pretest		Posttest		Pretest		Posttest		
	n	%	n	%	n	%	n	%	Pretest
Low	6	5.22	60	52.17	5	4.35	7	6.09	$\chi^2=0.48$ P=0.79 DF=2(NS)
Moderate	45	39.13	36	31.30	50	43.48	52	45.22	Posttest
Potentially concerning levels	64	55.65	19	16.52	60	52.17	56	48.70	$\chi^2=83.09$ P=0.001*** DF=2(S***)
Total	115	100	115	100	115	100	115	100	

NS= not significant DF= Degrees of Freedom  $P>0.05$  not significant,  $***p\leq 0.001$  very high significant

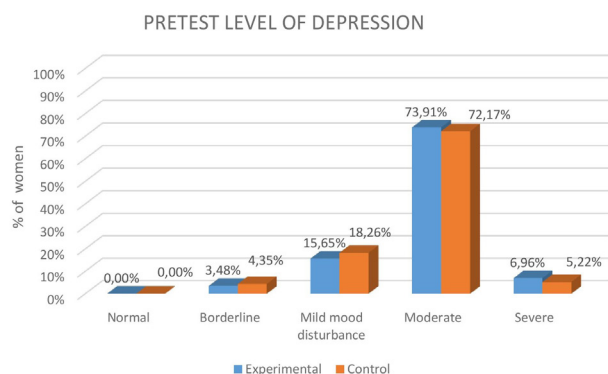


Figure 3: Distribution of pre-test depression score among women

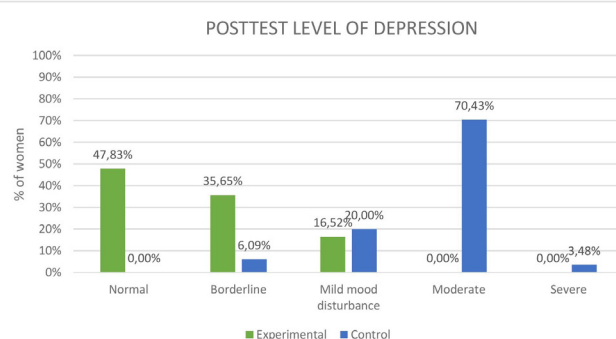


Figure 4: Distribution of post-test depression score among women

and severe depression. In the control group, none of them are normal, 6.09% of them are having Borderline depression, 20.00% of them had mild depression, 70.43% of them are having moderate depression and 3.48% of them are having severe depression as shown in (Figure: 4). Statistically, there is a significant difference between the experimental and control groups in the posttest as displayed in (Table III).

## DISCUSSION

The current study was aimed to unveil the impact of Cognitive Behavioural Therapy (CBT) on psychological

profile among women with surgical menopause. The study outcome reported that there is a significant reduction in anxiety and depression levels after intervention with CBT. Women are at risk of cognitive impairment and psychiatric complaints as anxiety and depression during either natural or surgical menopause. Cognitive behavioural therapy is a rich, complex, and budding model of management that has been established and is functional to a widespread range of mental health conditions and physical problems. From its early days in the 1970s, CBT has grown up as one of the distinguished models of psychotherapy, and it is broadly disseminated and implemented around the world. CBT

**Table III: pretest and posttest level of depression among women with surgical menopause**

Level of depression	Experimental (115)				Control (115)				Chi square test
	Pretest		Posttest		Pretest		Posttest		
	n	%	n	%	n	%	n	%	
	Pretest								
Normal	0	0.00	55	47.83	0	0.00	0	0.00	$\chi^2=0.65$ P=0.89 DF=3(NS)
Borderline	4	3.48	41	35.65	5	4.35	7	6.09	
Mild mood disturbance	18	15.65	19	16.52	21	18.26	23	20.00	<b>Posttest</b>  $\chi^2=164.65$ P=0.001*** DF=4(S***)
Moderate	85	73.91	0	0.00	83	72.17	81	70.43	
Severe	8	6.96	0	0.00	6	5.22	4	3.48	
Total	115	100	115	100	115	100	115	100	

NS= not significant DF= Degrees of Freedom P>0.05 not significant, \*\*\*p<0.001 very high significant

has been considered as an evidence-based treatment for a huge variety of disorders by the American Psychiatric Association, the Australian Psychological Association, the British National Institute for Clinical Excellence, and many others in many parts of the world (20).

The results of this study were in the same line as the previous studies conducted on this domain. Gautam et al., (2020) conducted a study on Cognitive Behavioral Therapy for Depression by employing a combined CBT session among mild to severe depressive patients due to various social reasons. They got a significant reduction in depression scores after CBT intervention. Moreover, various trials of combined CBT sessions show the better result with severe depression (21). The present study was a randomized controlled trial which would be better to yield the study results. Another study by Norton et al., (2014) among menopausal stage women showed the effect of Cognitive-behavior therapy for menopausal symptoms (22). These results are also in line with Balabanovic et al., (2012) which found out that there was an improvement in the mood, physical and social aspects with CBT intervention (23). Another trial demonstrated that cognitive behavioral therapy (CBT) along with physical activity, enhanced menopausal consequences and physical functioning in women with breast cancer. Interventions of CBT and teaching relaxation strategies have also demonstrated some effectiveness in improving emotional, and cognitive issues (24). Widnall et al., (2019) in a study stated that classic cognitive behavioural therapy (CBT) was highly effective at reducing symptoms of anxiety and depression (25). Hence this study result also supports CBT as a better choice of intervention for people with psychosocial problems. The present study is the first-ever study conducted with CBT intervention among surgical menopause in Andhra Pradesh, India, which could help to improve menopausal women to overcome various complexities without hospitalization and prevent other conventional economic burdens for the patients. There is a lack studies in this field and more research are

needed to be performed to generalize the conclusive articulations on CBT mediation. However, there is a certain limitation of the present study. The sample size was very less and there was no follow-up protocol for the patients and the placebo or conventional treatment was not given to the control group.

## CONCLUSION

The current study reveals that cognitive behavioural therapy is a useful intervention tool to reduce anxiety and depression levels in women with surgical menopause. It is a simple, non-invasive, and effective intervention to reduce further consequences in women with surgical menopause. The study findings need more confirmation with more sample size to rule out further constraints in the implementation and accessibility of CBT.

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