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Comparison of Religious Cognitive Behavioral Therapy (RCBT), Cognitive Behavioral Therapy (CBT) And Citalopram On Depression and Anxiety Among Women with Breast Cancer: A Randomized Controlled Trial

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ABSTRACT

Introduction:The aim of this study was to compare the effect of religious cognitive behavioral therapy (RCBT), cognitive behavioral therapy (CBT), citalopram and usual care on depression among Women with Breast Cancer.
Methods:160 depressed women with breast cancer (ages 18-65 years) with a primary diagnosis of depression were randomly allocated to one of three intervention groups (RCBT=40, CBT=40, Citalopram=40) and one control group (usual care=40).Treatment outcome measures were administered before and after treatment, and at 6-month follow-up.
Results: In the GEE analysis, RCBT, CBT and citalopram groups decreased more depression to control group in after intervention and follow-up period, although there was no significant difference between intervention groups.
Conclusion: RCB, CBT and citalopram had equally effect in decreasing depression in women with breast cancer and the superiority of RCBT was not shown.

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Introduction

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Breast cancer is now conceptualized as a chronic disease, and survivors suffer from psychological distress [1-2]. Studies showed that not only half of the women in the first year of diagnosis of breast cancer have primary symptoms of anxiety or depression, or both, but also, the survivors experience psychological problems years after breast cancer treatment [3]. Co morbidity in turn, has negative consequences, including poor adherence to treatment [4-6], cancer progression[6-7] and increased mortality [8-10], even at its mild and moderate levels[10-11].

In the context of pharmacological treatment, citalopram is indicated as an appropriate antidepressant for women with breast cancer. However, side effects and interactions with some medications can be key factors in decision making by professionals and patients in receiving citalopram [12-13]. Recent studies also indicated that in prescribing antidepressants for cancer patients, the individual characteristics and the effectiveness of the drug in patients with major depression in the general population should be considered[14]. On the one hand, in a study, it was reported that short-term benefits of antidepressants were limited, and few clinical trials were conducted on their long-term benefits and harms [14-15].

These issues attracted the attention of practitioners to the use of non- pharmacological therapies such as CBT. The therapeutic effects of these interventions on depression in women with breast cancer have been reported in short time [16-17] and a long time follow-up [18-19]. However, there are conflicting results [20-22] and, in CBT, attention to its compatibility with the patient's cultural backgrounds is important [23], so that, its effect may be different in the context of the culture and religious attitudes[24].

In this regard, studies showed religious interventions, in particular with cognitive-behavioral structure compared to conventional ones, were able to further reduce the psychological symptoms of more religious patients with acute physical illness [25-27]. In addition, in women with breast cancer, the effectiveness of religious therapy as an important source of prediction of control and adaptation [28-30] , and improving emotional regulation skills during the years after treatment, was confirmed [31].However, some researchers questioned the suitability or usefulness of religious interventions [32-33], and the results of a study showed that the religious attitudes of the patients did not affect coping with cancer [34].

With regards to the development and influence of religious culture on Iranian society and the existence of contradictory results, this study aimed to compare the effects of RCBT, CBT and Citalopram treatment on depression in women with breast cancer.

Material and methods

The study protocol has been published elsewhere in detail [35]. This randomized controlled trial with parallel groups aimed to evaluate the effect of RCBT, CBT and citalopram, as compared to usual treatment, on the reduction of depression in women with breast cancer in Tuba Clinic, Sari. This center is located in Mazandaran in northern Iran, and has a population of 3,021,740.

This study was approved by the Behavioral Sciences Research Center in Mazandaran University of Medical Science (2013-12-04]. An ethical consensus was received from the Ethics Committee under the Research Deputy of Mazandaran University of Medical Sciences (92193) which is fully compliant with the Helsinki Declaration of 2008. Inclusion criteria included women with breast cancer who are being treated in Tuba Clinic; age less than 65 years; being at a clinical level of 1, 2 or 3 for breast cancer; having undergone surgery, chemotherapy or radiotherapy; ability to understand and communicate in Farsi; educational level of junior middle school or higher; meeting the DSM-IV criteria for depression [36]; obtaining a score of ≥8 for depression based on the Hospital Anxiety and Depression Scale (HADS, Iranian version) [37]; providing written consent for study participation; and expressing religiosity [38]. Participants with known psychiatric history like schizophrenia, bipolar disorder and serious suicidal thoughts, based on the clinical interviews (DSM-IV) performed by a psychiatrist, and obtaining a score of ≥14 for HADS; participants with a history of physical illnesses or any kind of malignancy that prevented them from attending the treatment sessions; participants who have taken part in RCBT or CBT or other psychotherapy courses; and patients taking citalopram or other antidepressants for the previous two weeks were excluded from study.

Procedure

The medical records of the participants were reviewed to assess initial inclusion and exclusion criteria by researchers. Participants were then contacted through telephone and the study was explained in brief. If they agreed to participate, then, they were invited to a baseline screening by the researchers. After providing written informed consent at Tuba Clinic at the approved time, the participants were asked if they were religious people (yes or no); for those who answered yes, the intensity of their religious attitudes was determined by using Golriz and Baraheni's religious attitude questionnaire (Persian version) [39]. If their score exceeded 25, they were enrolled in the trial. The depression symptoms were also measured by the HADS questionnaire. Participants with HADS depression scores of ≥8 were referred to a psychiatrist for a clinical interview in accordance with DSM-IV criteria. Those who had severe psychological problems in the interview were excluded and referred for treatment. Assessments were conducted at baseline, immediately after intervention, and six months after the intervention in the same clinic.

Sample size and sampling

The sample size was calculated to be 40 in each group based on previous studies [23] and with regard to α=5%, power = 80%, and the possible loss of samples = 20%. Randomization Block randomization procedures stratified participants based

on age (≤48, ≥48) and educational level (≤ high middle school and ≥ high middle school). Consenting participants were allocated to intervention (RCBT+ usual care, CBT+ usual care, citalopram + usual care) and control groups (usual care). Given the nature of the intervention, there was no possibility of blinding for participants and assessors. For randomization and data analysis, a statistician was blinded.

Measures

Measures included: The demographic and clinical data forms and the Religious Orientation Scale developed by Golriz and Baraheni's.

The validity of this test was 80% in the correlation coefficient test of Allport-Vernon-Lindsey, while the reliability obtained a score of 0.850 by the Spearman Brown method.

Hospital Anxiety Depression Scale (HADS): This scale was developed by Zigmond and Snaith [40]. It was also confirmed in Iran in terms of validity and reliability by Montazeri et al. (Cronbach's alpha=0.86). A clinical interview (DSM-IV) was used for clinical diagnosis. Details of the measures have been explained in the protocol of this study [35].

The design of the study and the anticipated flow of the participants are graphically shown in Diagram 1.

Interventions

Both the RCBT and CBT groups encompassed 12 one-hour weekly sessions. The citalopram group was started with the prescription of 20 mg/day and gradually increased to 40 mg every evening, based on a psychiatrist's order, for three months. Citalopram was provided by Sobhan Pharmaceutical Company in Iran. It has been officially licensed by Iran's Health Ministry. Participants in the control group received the usual breast cancer treatment from the oncology team, which is physical care, medication, nutrition, activities, routine psychological care, and periodic visits for follow-up. All the participants were called once every two weeks throughout the study, and their probable questions were answered by a research assistant. Also, the participants in whom the depression symptoms worsened were excluded from the study and referred to psychiatrists for further treatment. Therapeutic sessions of RCBT and CBT have been described in detail elsewhere [41]. Post-tests were conducted immediately and six months after the intervention (follow-up).

Statistical analysis

Data analysis was performed using SPSS version 20. To compare the demographic clinical variables with qualitative nature, the Chi-square test and Fischer's exact test were used. To evaluate the normal distribution of quantitative variables, the Kolmogorov-Smirnov test was used. In cases where the assumption of normalization was confirmed, One-way ANOVA was used and in cases where the distribution of values was not normal, a non-parametric (kruskal-wallis) test was used. In both cases, if there was a discrepancy between the groups, LSD test was used in parametric mode and Mann-Whitney U test was used in nonparametric mode.

To analyze the depression score at different times, GEE test was used in the four groups. Spearman correlation was used to examine the relationship between variables due to the nature of abnormalities of variables.

Ethics

The participants were informed about the purpose of the study and were assured about the safety of the interventions. They were also made aware of the confidentiality of their personal information. Permission for doing the project came from Ethics Committee of Research Deputy of Mazandaran University of Medical Sciences and from Tuba Specialist Clinic. Every question posed by the participants was answered by the researcher. Participation was voluntary and participants were informed that they can withdraw their consent to participate at any time. Written consent was obtained from all the participants. Because the participants get tired quickly, all interviews were brief. The RCBT and CBT therapists have passed the relevant courses, have the experience in this regard, and can identify thoughts of suicide and refer them to the clinic. The therapists were work under the supervision of experts to support the participants.

Results

The flow of participants from the beginning to the end trial is summarized in figure 1. Also, the results of statistical tests did not show a significant difference in demographic, clinical and religious attitude variables in the baseline between the intervention and control groups (Table 1).

The mean HADS score for the experimental and control groups were respectively RCBT 10.95(SD = 2.15), CCBT 11.23(2.12), citalopram 11.37(1.89) and the control group 10.92 (SD = 2.27) points. There was no statistically significant difference between the four groups at baseline (P = 0.759) (table 1).

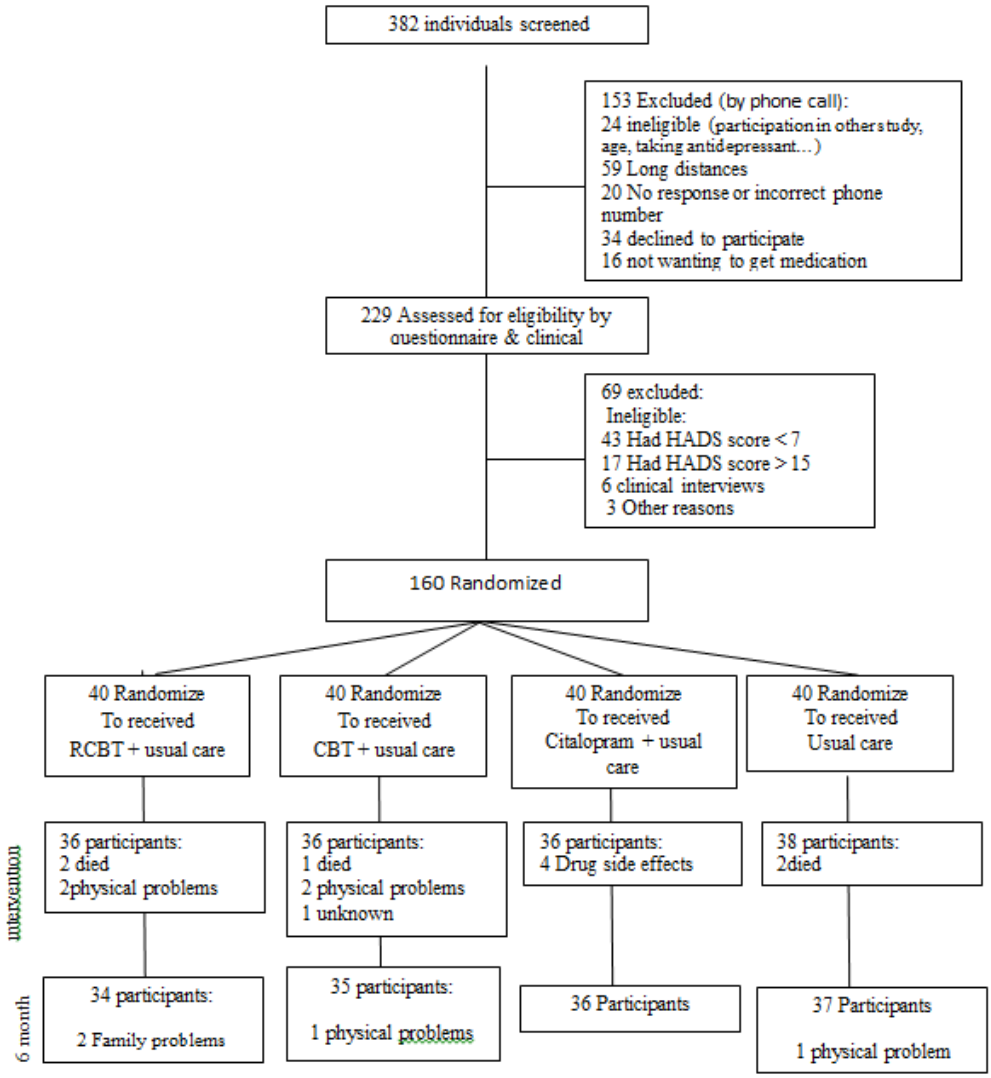

Figure 1: flow up participants through study

Table 1: Baseline characteristics of intervention and control groups

Variables		RCBT n=40	CBT n=40	Citalopram n=40	Control n=40	Total group n=160	P-value
Marital status n (%)	Single	0(0.0)	0(0.0)	3(7.5)	1(2.5)	4(2.5)	.278*
	married	39(97.5)	40(100.0)	36(90.0)	38(95.0)	153(95.6)	
	Divorced / Widowed	1(2.5)	0(0.0)	1(2.5)	1(2.5)	3(1.9)	
Job-status n (%)	housekeeper	34(85.0)	36(90.0)	32(80.0)	32(80.0)	134(83.8)	.898*
	employed	1(2.5)	1(2.5)	2(5.0)	2(5.0)	6(3.8)	
	teacher	2(5.0)	1(2.5)	3(7.5)	1(2.5)	7(4.4)	
	Self-employed	2(5.0)	1(2.5)	0(0.0)	2(5.0)	5(3.1)	
	Part-time work	1(2.5)	1(2.5)	7.5(7.5)	3(7.5)	8(5.0)	
Education n (%)	<diploma	36(90.0)	37(92.5)	32(80.0')	34(85.0)	139(86.9)	.404*
	>diploma	4 (10.0)	3(7.5)	8(20.0)	6(15.0)	21(13.1)	
Insurance n(%)	Yes	39(97.5)	37(92.5)	39(97.5)	38(95.0)	153(95.6)	.837*
	No	1(2.5)	3(7.5)	1(2.5)	2(5.0)	7(4.4)	
Residence	Personal	34(85.0)	33(82.5)	36(90.0)	33(82.5)	136(85.0)	.768*

status n (%)	home						
	Rented home	6(15.0)	7(17.5)	4(10.0)	7(17.5)	24(15.0)	
Number of children n (%)	1-2	17(42.5)	20(50.0)	12(30.0)	14(35.0)	63(39.4)	.428*
	3-4	18(45.0)	15(37.5)	19(47.5)	20(50.0)	72(45.0)	
	≥5	2(5.0)	3(7.5)	5(12.5)	2(5.0)	12(7.5)	
	unknown	3(7.5)	2(5.0)	4(10.0)	4(10.0)	13(8.1)	
Age group n(%)	<48	19(47.5)	17(42.5)	18(45.0)	21(52.5)	75(46.9)	.831**
	>48	21(52.5)	23(57.5)	22(55.0)	19(47.5)	85(53.1)	
age	mean (std)	47.9 (8.5)	48.4 (8.5)	49.5 (7.9)	47.4 (8.0)	48.3(8.2)	.709***
Religious attitude	mean (std)	71.4(10.6)	73.6(15.9)	71.2(8.1)	73.5(3.9)	72.4(10.5)	.629****
Mastectomy	Total	17(42.5)	15(37.5)	13(32.5)	18(48.6)	63(40.1)	.428*
	partial	23(57.5)	25(62.5)	25(62.5)	19(51.4)	92(58.6)	
	Unknown	0(0.0)	0(0.0)	2(5.0)	0(0.0)	2(1.3)	
Underlying disease	Yes	22(55.0)	16(40.0)	23(57.5)	22(55.0)	83(51.9)	.380*
	No	18(45.0)	24(60.0)	17(42.5)	18(45.0)	77(48.1)	
Depression (HADS)	mean (std)	10.95(2.15)	11.23(2.12)	11.37(1.89)	10.92(2.27)	11.12(2.09)	.759

* Fisher'S Exact ** Chi square *** One Way ANOVA ****Kruskal-Wallis Test

The mean of depression scores in the RCBT group before the intervention was 10.95, which by a decrease of 3.72 after the intervention, changed to 7.23, and decreased by 0.15 in the follow-up. The mean of depression score in the CBT group before the intervention was 11.23 which, by a decreased of 3.43 after the intervention, changed to 7.80, and decreased by 0.3 in the follow-up. The mean of depression score in the citalopram group before the intervention was 11.37 which, by a decreased of 3.74 after the intervention, changed to 7.63, and decreased by 0.65 in the follow-up. The mean depression score in the control group before the intervention was 10. 92 which, by a decreased of 0.06 after the intervention, and an increase of 0.08 was observed in the follow-up as compared to the after intervention, but had a slight decrease relative to the before intervention (Figure 2).

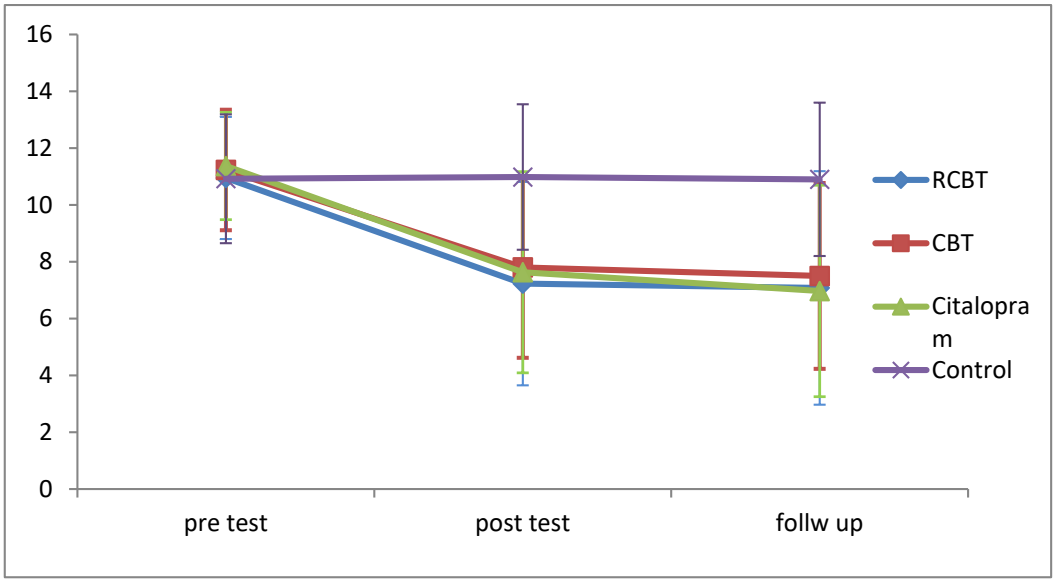

Figure2.changes in HADS scores at the baseline, after intervention and follow- up

The results show that both group and time have a significant effect on depression in patients during the study (P <0.0001). (Table2).

Table 2. GEE analysis on outcome variables.

Variable	B	SE	95%Wald CI	Wald x2	Df	P
Group(RCBT)a	-.256	.0625	-.378 to -.134	16.791	1	<.0001
Group(CBT)a	-.210	.0549	-.318 to -.103	14.659	1	<.0001
Group(citalopram)[a]	-.237	.0559	-.346 to -.127	17.902	1	<.0001
Time(3Th)[b]	-.336	.0367	-.408 to -.264	83.379	1	<.0001
Time(2Th)[b]	-.298	.0317	-.360 to -.236	88.074	1	<.0001

a. reference group, Control group
b. reference group, Time (1st)

The results showed that there was no significant difference between RCBT, CBT and citalopram groups in decreasing depression before intervention compared to after intervention: RCBT and CBT (P=0.867), RCBT and Citalopram (P = 0.597), CBT and Citalopram (P = 0.487), but there was a significant difference between the three intervention groups and the control group before intervention in comparison with the after intervention in reducing depression (P<0.0001). There was no significant difference between the three intervention groups in decreasing depression in the before intervention, relative to the follow-up: CBT and RCBT (P=0.846), Citalopram and RCBT (P = 0.363), Citalopram and CBT (P = 0.270), but a significant difference was observed between the three intervention groups and the control group, before intervention, relative to the follow-up (P <0.0001). There was no significant difference after-intervention as compared to the follow-up between any of the intervention and the control groups in reducing symptoms of depression (P = 0.606).
The results of within changes in RCBT, CBT and Citalopram groups showed that the difference between before intervention and after the intervention and before intervention to the follow-up was statistically significant (P<0.0001).
Also, depression in the citalopram group after intervention decreased significantly as compared to the follow-up (P = 0.006). However, after the intervention and follow-up, the reduction of depression in the RCBT (P = 0.680) and the CBT groups (P = 0.304) was not significant. In the control group, changes made before and after the intervention, and follow up were not significant (P = 0.930) (Table 3).

Table 3: Comparison of outcome variables by group

Variable	RCBT	CBT	Citalopram	Control	k-w test	Post hoc*
T2-T1	-3.72(3.40)	-3.43(2.60)	-3.75(3.85)	.05(1.75)	<.0001	4<2,3,1
T3-T1	-3.88(3.96)	-3.73(3.12)	-4.40(4.08)	-.03(1.99)	<.0001	4<2,3,1
T3-T2	-.15(2.33)	-.30(1.87)	-.65(1.51)	-.08(1.33)	.606	<1, 2, 3,4>
Wald x2	<.0001	<.0001	<.0001	.930		
**Post hoc	T1>T2,T3	T1>T3,T2	T1>T2>T3	<T1,T2,T3>		

* Mann-Whitney U ** LSD

Discussion

This is the first clinical trial that compared the effects of RCBT relative to CBT and citalopram on the reduction of depression in women with breast cancer.
Contrary to the first hypothesis on more effectiveness of RCBT than CBT on the depression of women with breast cancer after intervention and during the follow-up period, the results indicated the same effect of interventions and no significant difference between the two therapeutic methods in reducing depression in women with breast cancer.
The reasons for the similar results for the two interventions are as follows:
The present study was conducted only on patients who said that religious beliefs were important to them, and analysis of the findings showed that, more than 63.8% of patients had a good religious attitude. Considering the above, one of the reasons for similarity in the outcomes of the intervention may be the effect of the religious attitude of the participants in the CBT group, which had an increasing effect on the intervention.
In this regard, the similarity of the parts of the content of the RCBT and CBT interventions provided in the present study is also noteworthy. The RCBT intervention contains concepts from Quranic verses that, like the CBT, show the important role of thought and belief in behavior and emotions, such as believing in God (good thoughts and beliefs) and doing good deeds (good behaviors) which affect emotions of persons and can reduce fear, sorrow and grief of man (for example, in Suras and verses respectively, 6:48, 46:13, 13:28) in the Holy Quran [42]. In addition, the existence of concepts of altruistic behaviors, forgiveness and generosity is also emphasized in both religious and psychological interventions [43]. Such cases illustrate similarity in the important concepts which could possibly affect the equivalence of the effect of these two interventions.
Another issue that can be raised in relation to the same effects of the RCBT and CBT interventions is insufficient attention to concepts related to existential crises that patients experience with cancer. Essentially, various studies have shown that cancer patients are exposed to existential distresses with loss of control, identity crisis and self-worth, communication with

themselves and with others, and changed meaning of life[44]. In addition, it was reported that spiritual religious counseling is important in many cancer patients during an existential crisis of cancer, and cognitive-religious practices derived from religious beliefs and internal resources of cancer patients can be helpful in confronting identity crises[45]. Reports (Wei et al., 2016) suggest that this kind of combination therapy not only focuses on the reduction of physical and mental symptoms, but also well considers the existential distresses and spiritual needs of patients [29]. Meanwhile, in the RCBT package provided in the current study, despite the use of religious concepts related to the religious culture of this community, religious concepts appropriate for coping with the existential distresses of these patients were limited, which could possibly affect the treatment response of the RCBT group and lead to the same effect of intervention in both groups.

The findings are contradictory to those of some studies in this area. In the study of Koenig et al., (2016), the effects of RCBT therapy with increased daily prayer and the therapeutic alliance in patients with depression, was more effective than CBT [46]. Moreover, Ebrahimi et al. (2015) also showed a better correction of the inefficient attitude of patients with dysthymic disorders in the treatment with psychotherapy combined with spirituality as compared to the treatment with CBT[47]. Similarly, the results of the study by Propst et al. (1992) also indicated superiority of the RCBT and religious counseling to standard CBT in reducing symptoms of depression, improved social adjustment, and general symptom otology immediately after intervention[48].

In this regard, Koenig et al. (2015) and Pearce et al. (2015, 2016) also confirmed the similar effect of treatment with RCBT and CBT in reducing depression, increasing optimism, forgiveness and gratitude in patients with major depression after intervention and follow-up; concepts that predicted depression reduction[25, 43, 49].

Regarding the second hypothesis that RCBT is more effective than citalopram for depression in women with breast cancer, the results indicate that the effects of these interventions were similar in reducing depression after the intervention and follow-up period.

Similarity of the effectiveness of RCBT and citalopram interventions and lack of citalopram superiority in reducing depression, regarding the side effects of drugs and the possibility of interactions with other drugs in this particular group of patients, it would be better, encourage them to use non-pharmacological treatments.

There are conflicting results with our findings. The results of Ebrahimi et al. (2013) showed that spirituality combined with psychotherapy to reduce the symptoms of depression in patients with dysthymia was more effective than the drug group after intervention and in the follow-up period of 3 months[50]. in the study of Lim et al. (2014), there was no significant difference in the treatment of psychological disorders with RCBT intervention in comparison with other therapeutic patterns, including drug therapy, or the initial effects of RCBT treatment were not stable [51].

Basically, comparative studies on the RCBT and drug therapy are limited. In a meta-analysis, it was reported that the effect size determined by psychotherapy and pharmacological interventions for estimating the effectiveness of treating depression symptoms is ambiguous and misleading[52] and so far, the issue that the effects of drug therapy and psychotherapy are complementary or independent of one another, or their combination therapy leads to more effects than the sum of the two treatments, was not confirmed[53], which requires interventions with standard methodology and transparency in the results.

The third hypothesis that the RCBT, CBT and citalopram were more effective than routine treatment of depression in women with breast cancer after intervention and follow-up period was supported.

The results of Ebrahimi et al. (2013) suggested more effectiveness of psychotherapy combined with cultural capabilities and religious teachings in the intervention group as compared to the control group, on the ineffective attitudes of patients with dysthymia[50], which is similar to the current findings.

In line with the present study, a recent meta-analysis of clinical trials, showed a trend towards the recovery of depression with spiritual religious interventions as compared to the routine treatment of 1 to 6 months of follow-up are reported by Conclaves et al. (2015)[54]. The effect of this type of treatment has been shown to increase the level of participants' compatibility with clinical depression symptoms. On the other hand, Bonelli et al. (2012) reviewing 444 related articles showed that more than 60% of patients with deeper religious beliefs had less depression. In addition, the rate and speed of improvement in depression symptoms in response to religious and spiritual interventions further reduced as compared to the control group[55].Fundamentally, experts emphasize that the tendency of patients, especially cancer patients, for religious and spiritual beliefs and religious practices emerges through alternative routes, and at different moments of illness episode and with regard to personal factors [56].

Contrary to the current results, in a systematic review by Schreiber and Brockopp (2012), a limited relationship was reported between religion, spirituality and mental health[57], but researchers believed that the extent of definitions of the above variables and the existence of a serious methodological limitation in some of the papers examined caused ambiguity in the strength and status of this relationship, and the RCBT as a psychological intervention is questionable[58]. Perhaps, designing a standard clinical trial, the alignment of integrated therapeutic interventions with the cultural structure adapted to the spiritual needs would increase the patient's acceptance and response to treatment[59].

In line with the findings of the current study, Gudenkauf et al. (2015)[17], Stagl et al. (2015)[18] and Xiao et al. (2016) in a meta-analysis[60] , reported that CBT was more effective than control group in reducing the symptoms of depression in patients with breast cancer. Also, Osborn et al. (2006) [61] and Stagl et al. (2015)[19] reported effective of different CBT approaches to control groups in patients that survived in long-term.

Consistent with our finding, in recent studies it is reported that CBT based on culture [62-63] and guidance of participants towards self-help[64] even when done in short-term (6 sessions) is more effective than the control group in reducing symptoms of depression [62].However, finding of Groarke et al. (2012), showed, in one-year follow-up, the results did not show the sustained effect of CBT as compared to the control group [21].

In line with the current study Wagner et al. (2004) reported treatment with citalopram reduced depressive symptoms to a significantly greater extent than control group and was well tolerated[65]. Also, our study was confirmed by Rutherford et al. (2017)[66]. The primary findings of this study were that participants randomly assigned to open citalopram had significantly greater improvement in depressive symptoms compared with those receiving placebo-controlled citalopram. However, they reported patient expectancy to be a significant mediator of placebo effects. Despite the positive findings, we have no useful evidence specific to cancer patients with depression on which to base the choice of a specific antidepressant drug[67].

This study contains the following limitations that should be considered in order to more accurately evaluate the effects of RCBT intervention as compared to other therapeutic interventions.

-Failure to predict patient's re-treatment (chemotherapy, radiotherapy, etc.) during interventions or follow-up periods that could have an impact on the response to treatment interventions.

- In preparing the RCBT package, the needs related to the type and specific conditions of the disease should have been considered in a more inclusive manner. This issue is important in responding more effectively to treatment.

- In this study, patients who had mild to moderate depression were included and their results could not be generalized to patients with severe depression. Therefore, similar studies in this group of patients are also necessary.

- The dosage of citalopram was 20 to 40 mg. The number of patients that responded to a minimum dose or maximum dose is unknown.

Despite the above limitations, the present study has strengths that include the following:

- In the present study, the treatment package used, the CBT was considered to be combined with a cultural structure which is consistent with the spiritual needs and content of the religious thoughts of the patients.

- In depression diagnosis, in addition to the HADS questionnaire, clinical interview (DSM-IV) was used by a psychiatrist to determine the symptoms of depression.

- In this study, besides comparing the 3 intervention groups, the groups were compared with the control group as well.

Conclusion

This is the first clinical trial which compared the effect of RCBT treatment with CBT and citalopram on reduction of the symptoms of depression in women with breast cancer.

The results showed that the efficacy of the three intervention groups was the same in reducing the symptoms of depression in patients with breast cancer after intervention and follow-up period of 6 months. In addition, the results showed that the three intervention groups were more effective than the control group in decreasing the symptoms of depression in breast cancer patients after intervention and follow-up period of 6 months. However, the intervention groups had reduced symptoms of depression with different approaches. Performing clinical trials with more samples and in patients with major depression is essential.

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