J Biochem Tech (2019) 10(3): 92-97
ISSN: 0974-2328

Effectiveness of Cognitive Behavioral Therapy-based self-management on depression in Pregnant Women: A Randomized Controlled Trial

Masomeh Mehri, Mina Iravani*, Mehdi Sayyah Bargard, Mohammad Hosein Haghighizadeh

Received: 17 April 2019 / Received in revised form: 09 September 2019, Accepted: 17 September 2019, Published online: 28 September 2019

Abstract

Objective: While pregnancy is considered a pleasant period for most women, it is a vulnerable and stressful period in life of women. Many psychological changes occur during this period, making the person vulnerable to many illnesses such as depression. The objective of this study was to evaluate the effect of self-care based cognitive-behavioral therapy on depression during pregnancy .Methods: This research was a clinical trial study conducted on 68 pregnant women admitted to health centers. The samples were randomly divided into treatment and control groups (n=34) using convenience sampling method. The control group received the routine care and the treatment group received 8 sessions of group cognitive-behavioral therapy, one hour per session, and once per week. Immediately, 4 and 8 weeks after the end of the counseling sessions, all samples were invited to re-complete the questionnaire. The research inclusion criteria included first pregnancy, age between 15 to 45 years, ability to speak Persian language, reading and writing literacy, obtaining the score 10-15 in Edinburgh Postpartum Depression Scale, and gestational age between 22 and 26 weeks. The exclusion criteria of the study also included drug abuse, other mental illnesses except for depression, neurological diseases, receiving any treatment at the time of research for depression, and history of infertility. Results: The research results revealed a significant difference between the means of depression in the treatment group immediately, 4 months and 8 months after the intervention ($p < 0.0001$). Conclusion: It seems that self-care based cognitive-behavioral therapy to improve the depression during pregnancy.

Keywords: Self-Management, Depression, Pregnant Women

Masomeh Mehri
MS.c of Midwifery, Midwifery Department, Reproductive Health Promotion Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

Mina Iravani
PhD in Reproductive Health, Assistant Professor in Midwifery Department, Reproductive Health Promotion Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

Mehdi Sayyah Bargard
M.D. Psychiatrist, Associate Professor of Psychiatry, Educational Development Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.

Mohammad Hosein Haghighizadeh
MS.c of Biostatistics, Instructor, Department of Biostatistics and Epidemiology, School of Public Health, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.

***E-mail:** minairavani2004 @ yahoo.com

Introduction

Pregnancy is considered as one of the crucial stages in the life of a women. While this period is considered as a pleasant period for most women, it is often regarded as a vulnerable and stressful period (Abbaszadeh et al., 2013), since many physiological and psychological changes occur in this period. These changes make the individuals physically and mentally vulnerable to harms (Coll et al., 2017). Thus, the possibility of developments of states such as depression, anxiety, obsessive-compulsive disorder, and so on is high in this period (Forouzandeh et al., 2003). Depression is a state of hatred of work, which can affect thoughts, behavior, feelings, and well-being (Edition, 2013).

Depression is associated with symptoms such as impaired memory and concentration, weight loss, reduced appetite, feeling bad about yourself, feeling guilty and frustration, thinking on self-harm, and low self-confidence (Omidvar et al., 2007). The rate of depression in women is two times more than that in men, due to hormonal problems such as menstruation, menopause, postpartum, and so on (Albert, 2015). Almost one out of four women experiences the depression during their life, mainly at her reproductive age. Depression is the most common psychiatric disorder during pregnancy (Ayele et al., 2016). Almost 20% to 30% of pregnant women experience depression (Mossie et al., 2017).

Various studies have reported different risk factors for depression among pregnant women in different regions, including low age, low level of education, history of depression, history of abortion and pregnancy corruption, and history of childhood sexual abuse, high anxiety in pregnancy, low self-esteem, and low social support (Ayele et al., 2016). A number of negative complications are associated with depression during pregnancy including maternal dysfunctions, poor nutrition / weight loss, preeclampsia, eclampsia, non-observing the care during the pregnancy, drug abuse, suicide, adverse outcome of pregnancy, postpartum depression, disorder in cognitive abilities and depression during childhood and adolescence (McGregor et al., 2014). Health care

providers may use psychological methods (such as behavioral activation, cognitive-behavioral therapy and interpersonal psychotherapy) or antidepressants such as selective serotonin suppressants and tricyclic antidepressants for the treatment of depression (Mokhber et al., 2013). The use of antidepressants may have negative consequences for the baby (Simpson & Noble, 2000). As a result, women use fewer antidepressants during pregnancy than other periods (Lancaster et al., 2010) and they prefer psychological therapies (Ericksen et al., 2005). Cognitive-behavioral therapy is one of these psychological approaches, focusing on cognitive reconstruction. It involves evaluating, decisively challenging, and modifying inefficient beliefs of patients. Changing the maladaptive beliefs to adaptive beliefs has been considered as the main means of the process of cognitive-behavioral therapy change (Dobson & Dobson, 2018).

A study conducted on 36 depressed pregnant women showed that cognitive-behavioral therapy was effective in reducing depression (Burns et al., 2013). A study conducted on 55 depressed pregnant women also showed that cognitive-behavioral therapy is effective in reducing the symptoms of depression (O'mahen et al., 2013). However, some studies have stated that this type of therapy is not effective in reducing the symptoms of depression (McGregor et al., 2014). Depression during pregnancy can also reduce self-care capacity, including proper nutrition, drug or alcohol abuse, lack of attending at pregnancy clinics, which might endanger woman's physical and mental health and prevent desirable growth of embryo (Leigh & Milgrom, 2008). Self-care refers to any human supervisory performance, controlled by the individual consciously. It maintains the individual's health, improves his or her adaptability, improves the clinical outcomes and reduces the cost of therapy (Soleiman et al., 2015). A wide range of cares is required to give a healthy neonate. These cares begin with the woman and her family and from her home (Tabriz, 2015). Studies have shown that cognitive-behavioral therapy has a positive effect on self-care behaviors and reducing the depression (samadzadeh et al., 2015). As self-care along with behavioral-cognitive behavioral therapy has not been used in none of the studies to treat depression and there is not agreement on the effect of cognitive-behavioral therapy, the researcher decided to conduct this research to evaluate the effect of self-care based cognitive-behavioral approach on depression during pregnancy.

Methodology

This study is a randomized clinical trial conducted from June to September 2012 on pregnant women admitted to health centers of Shushtar and Ahwaz. This research was approved by the Ethics Committee of Ahwaz University of Medical Sciences (IR.AJUMS, REC.1397, 313) and registered in the IRCT20180823040855N1 Clinical Trials Registration System.

After obtaining the written consent and providing adequate explanations on the research objectives and ensuring confidentiality of the subjects' information, all mothers admitted to the selected health centers were interviewed to determine the inclusion criteria of study and to find the samples. The research inclusion criteria included first pregnancy, gestational age 22 to 26 weeks, age between 15 and 45 years, ability to speak Persian language, reading and writing skills, obtaining score 10 to 15 in Edinburgh Postpartum Depression Scale. The research criteria included drug abuse, other mental illnesses except for major depression disorder, neurological diseases, receiving any therapy during research for major depression disorder, being affected by underlying disease, history of infertility. The sample size was estimated to be 20 people by using the sample size calculation formula and considering the significance level (Cho et al., 2008), and the power of 90. Given the probability of dropout, sample size was considered 24 and it increased to 34 people to increase the accuracy of the study.

Samples were selected purposefully and randomly divided into two groups of treatment and control (n=34) using the math lap software. The control group received routine health care from health center midwifery. Intervention was given to the treatment group in accordance with the British protocol, known as self-care based cognitive-behavioral therapy, written by Dr. Michel Haring, cognitive-behavioral therapy consultant (Haring et al., 2011) in the form of 8 sessions of cognitive-behavioral therapy along with self-care one day per week in 8-member groups.

Michel Haring therapeutic guideline provides information and exercises, which can be used for treatment of women suffering from depression during pregnancy or after delivery. This guideline has been organized in several units. A particular section of a unit may be an appropriate place to begin a treatment, or it may be necessary needed to use all sections, new knowledge and skills to overcome its depression. One of the strengths of the cognitive-behavioral therapy is that it focuses on building skills to help people play an active role in reducing the symptoms of depression. The guideline trains skills such as identifying and management of physical symptoms of depression, identifying thought traps, depressive thinking, depressive thoughts management, and challenging them, and replacing healthy thoughts with depressive thinking and skills to overcome avoidance and non-useful behaviors and self-care skills.

In Mitchel Haring's cognitive-behavioral therapy guideline, people are prepared to perform some actions after gaining the knowledge and recognizing the depression symptoms on the way which it affects their body, thoughts, emotions and behaviors to create positive changes in thoughts, emotions, behavior, and the self-care domains in order to improve their health by setting the goal. Self-care in this guideline provides information on five key domains of nutrition, exercise, sleep and rest, spending time for yourself, support) (Haring et al., 2011). The phone number was provided to the research subjects to contact with the researcher whenever they had a question or a problem. The content of the sessions was as follows:

Session 1: Greeting, introducing, stating the general goals of sessions and the goal of this session, providing information about depression, its symptoms and complications during pregnancy, questions and answers, and providing homework.

Second 2: Greeting, review of homework, providing a summary of contents of the previous session, providing information on therapeutic options in women with depression during pregnancy, such as drug therapy and psychological therapies such as cognitive-behavioral therapy, explaining the cognitive-behavioral therapy, and its possible role in treatment of depression, question and answer, and providing homework.

Session 3: Greeting, review of homework, explanation of self-care and its importance, describing different domains of self-care such as nutrition, exercise, and the way to include and develop each of these domains in one's life, questions and answers, exercise and providing homework.

Session 4: Greeting, review of homework, the way of determining the goals for the development of each of self-care domains, and learning to solve existing problems to make positive changes in life, question and answer, exercise, and providing homework.

Session 5: Greeting, review of homework of previous session, teaching the various wrong and negative exacerbating the depression, learning to identify and recognize these thoughts, question and answer, exercise, and providing homework.

Session 6: Greeting, review of homework of previous session, problem-solving training and challenging depressive thoughts, question and answer, exercise and providing homework.

Seventh 7: Review of the previous session homework, providing solutions to prevent the relapse of depression symptoms, question and answer, exercise and providing homework

Session 8: Review of homework and review of all sessions, appreciation of the participants.

Immediately after the end of counseling sessions, all participants in the treatment and control groups were asked to complete the Edinburgh Postpartum Depression Scale. In addition, 4 and 8 weeks after counseling sessions, all of the samples were re-invited by phone to complete the questionnaire. The data collection tool included demographic data recording form, including age, job, economic status, educational level, ethnicity, and Edinburgh's postpartum depression scale. Data were analyzed using SPSS23 software. Quantitative data were analyzed using independent t-test and qualitative data were analyzed using Chi-square test. Repeated measures were used to compare the effect of intervention over time in two groups.

Results

Table 1 shows the distribution of demographic variables in the two groups. It shows that research subjects do not have significant difference in terms of demographic characteristics including age, education, job, ethnicity, body mass index, and income level (p-value> 0.05).

Based on Table 2, self-care based cognitive-behavioral therapy significantly reduces the rate of depression during pregnancy, between the two intervention and test groups. (P value <0.05) (Diagram1). Based on this table, intervention showed that self-care based cognitive-behavioral therapy significantly reduced the rate of depression during pregnancy immediately, 4 and 8 weeks after the completion therapy in the intervention group (p value <0.05).

Table 1- Distribution of demographic characteristics in both control and treatment groups

Demographic characteristics		Control group	Treatment group	P-value
Maternal age		27.44	28.09	0.56
BMI		27.09	26.53	0.59
Ethnicity	Arab	18.8	25	0.54
	Bakhtiari	40.6	25	
	Fars	34.4	40.6	
	Turk	0	3.1	
	Lor	3.1	9.4	
Income level	Poor	0	0	0.8
	Moderate	46.9	53.1	
	Good	53.1	46.9	
job	Housewife	65.6	68.8	0.7
	Employed	34.4	31.3	
Education	Elementary	0	0	0.9
	Secondary	9.4	12.5	
	High school	40.6	37.5	
	Academic	50	50	

Table 2- Comparison of mean and standard deviation of depression score in the treatment and control groups before intervention, immediately after the intervention, 4 and 8 weeks after the end of intervention

	control		experimental		
	mean	SD	mean	SD	p-value
before intervention	11.72	1.3	12.19	1.35	1.63
immediately after the intervention	15.41	1.7	5.75	1.68	0.0001
4 weeks after the intervention	12.91	1.4	8	1.07	0.0001
8 weeks after the intervention	14.06	1.3	6.5	1.45	0.0001
p-value	>0.05		<0.0001		

Discussion

The present study was conducted to evaluate the effect of self-care based cognitive-behavioral therapy on depression during pregnancy. Given the results of this study, self-care based cognitive-behavioral therapy can reduce depression during pregnancy. It seems that cognitive-behavioral can reduce depression in pregnant women through cognitive rehabilitation (Dobson, D., & Dobson et al., 2018) and enhancing the ability to detect negative thoughts in the individual, reforming the ineffective beliefs, avoiding the depressive thoughts, and looking at these thoughts as transient and temporary facts (Van der Velden et al., 2015), and replacing healthy thoughts with negative thoughts (Haring et al., 2011). In their study entitled controlled randomized trial of cognitive-behavioral therapy for prenatal depression, Alison Burns et al. found that cognitive-behavioral therapy reduced the rate of depression in pregnancy 15 and 33 weeks of follow-up (Burns et al., 2013). These results are in line with those of our results. In their research on using cognitive-behavioral therapy for depression during pregnancy of low income women, Heater Omahen found that cognitive-behavioral therapy reduced symptoms of depression after 16 weeks of randomization and 3 months of follow-up, which was consistent with the results of our study (O'mahen et al., 2013).

The results of our study are in line with those of Nicole et al. on the effect of internet cognitive-behavioral therapy in women with postpartum depression (Pugh et al., 2016). Similarly, the research conducted by Hyun Ju Cho et al. showed that cognitive-behavioral therapy during pregnancy is effective for preventing postpartum depression. It is consistent with result of our study (Cho et al., 2008). Betani et al. also achieved similar results in their research on online cognitive-behavioral therapy in preventing postpartum depression in mothers at risk. In a research entitled "Internet cognitive therapy for pregnancy depression, Erik Forsella et al. achieved results similar to those our study (Forsell et al., 2017). However, the results of research conducted by Marella Gregory et al. showed that although there was no significant difference in 38 weeks of pregnancy and 6 weeks after delivery between intervention and control groups, mean score of depression decreased more in intervention group over time. The contradictory results in these studies might be due to the use of homogeneous samples and short intervention sessions, non-and the randomized sampling method used in this study (McGregor et al., 2014). Researchers believe that self-care increases observing the therapeutic methods and thereby decreases depression (Sajjadi et al., 2008). The results of study conducted by Samadzadeh et al. on the effect of cognitive-behavioral therapy on self-care and symptoms of depression and anxiety in women with type II diabetes revealed that cognitive behavioral intervention caused significant clinical reduction in self-care behaviors and significant reduction in scores of depression and anxiety. The results of these studies are in line with those of our study (Samadzadeh et al., 2015). The study conducted by Agha Khani et al. revealed that self-care training reduces the rate of depression in patients with infarction, which is similar to results of our research (Aghakhani et al., 2017). The results of research conducted by Ghadampour et al. showed that self-care reduces depression in the elderly people with heart disease, which is in line with result of our results (Ghadampour and Hojjati, 2017). Depressed people use negative "automatic thoughts" on themselves, the world (for example, certain people or all people in general) and the future (Zolal et al., 2013). In cognitive-behavioral therapy, the person is encouraged to assume the relationship between negative automatic thoughts and feeling depression as hypothesis to be tested and to make use the behaviors which are the result of these thoughts as a benchmark for assessing the validity or of that thought (Ranjbar et al., 2010).

People are trained to replace their negative thoughts with healthy thoughts in this type of treatment. No one can view everything positive at all times. Healthy thinking means looking at the positive, negative and neutral aspects of a situation, and then making conclusion on that situation. In other words, healthy thinking means looking at life and the world in a balanced way and staying away from the thought traps (Haring et al., 2011). Some studies have indicated that each of cognitive-behavioral therapy and self-care alone effective in the health of pregnant women. This research is the first study using cognitive-behavioral therapy and self-care for the treatment of depression during pregnancy. It might have a higher effect on the health of pregnant women. The content of therapy sessions was provided based on a valid British protocol called self-care cognitive-behavioral therapy, designed by Michel Haring, cognitive-behavioral consultant. To assess the rate of depression in pregnant women, Edinburgh's postpartum depression scale was used, for which the validity and reliability have already been proven. It is

recommended that future studies to be conducted in multiparous women or in postpartum period.

Acknowledgment

This paper was derived from a Master's thesis in midwifery counseling. It was registered at the Iranian Center for Clinical Trials with IRCT20180823040855N1 code and approved at University of Medical Sciences with IR.AJUMS. REC.1397, 313 code on 2018.07.11. We thereby appreciate the honorable Research Deputy of Ahvaz Jundishapur University of Medical Sciences and the honorable employees of Ahvaz and Shushtar health centers. We also appreciate the honorable pregnant women who helped us at all the stages of our research.

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