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EFFICACY OF COGNITIVE BEHAVIOURAL THERAPY ONSTRESS, ANXIETY, AND DEPRESSION OF INFERTILE COUPLES : SYSTEMATIC REVIEW

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Abstract

This high rate of occurrence is connected to the underlying cause of infertility, the amount of time that a person has struggled with it, and the number of times that different treatment options have been attempted. There is a wide range of psychological impacts that can be caused by infertility, ranging from feelings of inadequacy and stress to adverse effects on interpersonal relationships, substantial sadness, and anxiety. Cognitive behavioral therapy, also known as CBT, is a type of psychological treatment that has been shown to be effective for a wide range of problems, including severe mental illness, marital problems, eating disorders, and anxiety disorders, as well as problems related to alcohol and drug use and problems related to substance abuse. CBT is also known by its acronym, CBT. There have been a great number of studies conducted on CBT, all of which testify to its capability to dramatically improve both functioning and quality of life. CBT therapy, in which patients are taught new thinking and behavior approaches to replace negative views about self, world, and future, is effective in detecting stressful circumstances and utilizing coping strategies. CBT counseling replaces negative thoughts of patients about self, world, and future. According to research, cognitive behavioral therapy (CBT) is reliably effective in reducing symptoms of stress and anxiety, but it has mixed results in treating depression.

Keyword: *Anxiety; Cognitive Behavioural Therapy; Depression; Infertility; Stress*

INTRODUCTION

Infertility is the failure of a couple to get pregnant for at least 12 months by having regular sexual intercourse without contraception. Fecundity is a woman's ability to become pregnant. Population studies state that the chances of a woman getting pregnanteach month are around 20-25%. Half of couples who experience infertility will become pregnant in the second and third years, while the rest are included in the group that is difficult to get pregnant.[1,2] Infertility is a common condition and can be caused by female, male, or both factors. Infertility has no known cause. Infertility problems can have a bigimpact on married couples who experience them, both medical and economic problems as well as psychological.[3,4]

Couples who experience infertility will undergo a long process of evaluation andtreatment, where this process can be a physical and psychological burden for infertile couples.[3,4] Infertility is caused by male and/or female factors. Male and female factors account for about 35% of cases each. Often, there is more than one factor with a combination of male and female factors that account for 20% of infertility. Genetic factors are associated with risk for many diseases that affect the reproductive system and fertility, including endometriosis, uterine fibroids, age at menarche, and age at menopause. Women with BMI > 29 tend to take longer to get pregnant.[5]

It is not at all unusual for a couple who is unable to conceive to experience mental health issues. According to the findings of many research, the estimated incidence of mental health problems ranges from 30% to 80%.[6] This prevalence is linked to the root reason of infertility, the length of time it has been experienced, and the number of timesvarious treatment options have been tried. Infertility can have a wide range of psychological effects, from feelings of inferiority and stress to negative effects on interpersonal relationships, significant depression, and anxiety.[7–9] Cultural and social pressures and norms are one of the most important contributing factors in the development of these psychological issues.[10]

Females are more likely to suffer from psychological disturbances, especially in societies where females are mostly accused to be the reason for couple's inability to conceive. This is especially true in societies where females are more likely to be blamed for a couple's inability to conceive. In addition, the education level of the female spouse and her employment situation are among the factors that play a role in this.[10] Becausetheir religion and culture permit men to have more than one wife at the same time, and because a female's inability to conceive gives them a pretty good excuse to remarry, childlessness can be especially distressing for infertile females in certain societies, suchas Muslim societies. This is especially the case for infertile females in Muslim societies.[11] This article investigate the efficacy cognitive behavioural therapy on stress, anxiety, and depression of infertile couples.

METHODS

Protocol

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) 2020 checklist. This list served as the foundation for the rules.

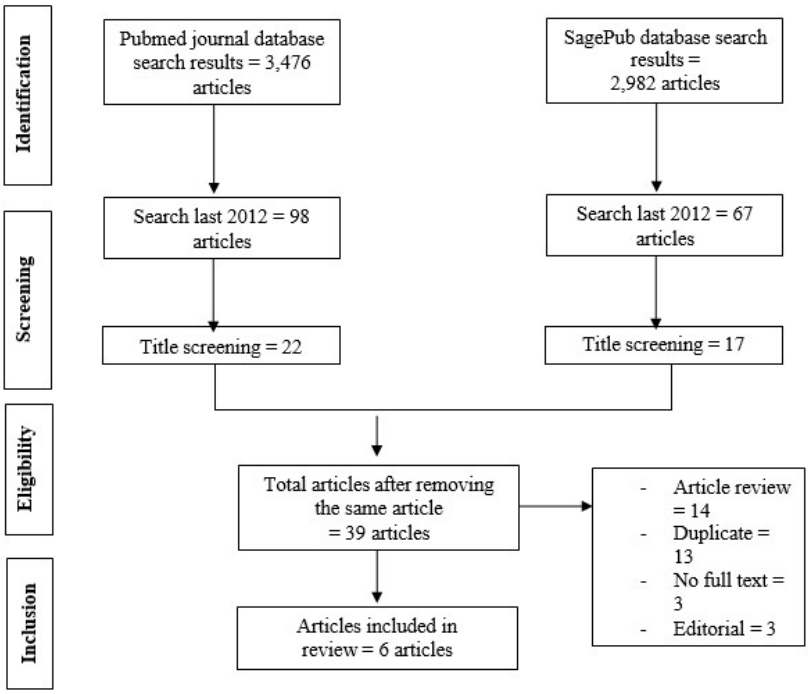

Figure 1. Article search flowchart

Eligibility Criteria

This systematic review was developed to assess literature on "efficacy", “cognitive behavioural therapy”,

"anxiety", "depression" and "stress". These are the subjects that were thoroughly covered in the study under consideration. The following conditions must be met in order for your work to be taken into consideration: 1) In order to be accepted, articles must be written in English. 2) In order to be considered, the articles had to have been published after 2017, but before this systematic review was created. The following types of textual entries will not be considered for inclusion in the anthology: 1) Editorial letters, 2) submissions without a Digital Object Identifier (DOI), and 3) articlereviews and submissions equivalent to those previously published in the journal.

Search Strategy

The search for studies to be included in the systematic review was carried out from December, 15nd 2022 using the PubMed and SagePub databases by inputting the words: "efficacy", "cognitive behavioural therapy", "anxiety", "depression" and "stress". Where *("obeses"[All Fields] OR "obesity"[MeSH Terms] OR "obesity"[All Fields] OR "obese"[All Fields] OR "obesities"[All Fields] OR "obesity s"[All Fields]) AND ("cardiovascular diseases"[MeSH Terms] OR ("cardiovascular"[All Fields] AND "diseases"[All Fields]) OR "cardiovascular diseases"[All Fields] OR ("cardiovascular"[All Fields] AND "disease"[All Fields]) OR "cardiovascular disease"[All Fields])* is used as search keywords.

Data retrieval

After doing a literature review and evaluating the titles and abstracts of previously published research, the study's author revised the criteria for what should and should notbe included in the study. The new criteria can be found in the study's appendix. This was done so that it could be determined which components of the issue should be included in the study and which should not. Following an examination of previously completed and published studies, the author came to the conclusion that these revisions were necessary. During the compilation of the systematic review, it was established that the only research projects worthy of consideration were those that succeeded in meeting all of the parameters. This meant that the only research proposals worthy of consideration werethose that were successful in meeting all of the conditions. This was done to ensure that the evaluation was as comprehensive as possible.

The purpose was to collect information about each individual study, such as its title, author, publication date, origin of study location, research study design, and research factors. This type of data can be obtained. The following are some instances of information that could be gathered: This information can be presented to you in a varietyof ways, depending on the presentation manner you want.

Quality Assessment and Data Synthesis

To determine which studies should be examined, the writers conducted their ownindependent appraisals of a subset of the research presented in the titles and abstracts ofthe articles. Following that, the full texts of the studies that meet the inclusion criteria forthe systematic review will be examined to determine which papers will be included as final inclusions in the review. This is done to address the question, "Which studies can we use for the review?"

RESULT

Golshani, *et al* (2021)[12] showed the mean scores of perceived stress (mean difference [MD] = − 7.3; confidence interval [CI] : 95%, from − 0.9 to − 5.6; $p < 0.001$) and anxiety (MD = -14.7; CI = 95%. from − 20.6 to - 8.8; $p < 0.001$) were significantly lower in the intervention group. The mean depression score in the intervention group was lower than the control; however, this between-group difference was not significant (MD = − 1.95; CI = 95% from − 3.9 to 0.2; $p = 0.052$). The mean score of quality of life in pregnancy was significantly higher in the intervention group than the control (MD = − 5.4; CI = 95% from 3.4 to 7.4; $p < 0.001$).

The mean of the infertility stress scores in CBT, fluoxetine, and control groups atthe beginning and end of the study were as follows, respectively: 3.5 ± 0.62 vs.2.7 ± 0.62 ($p<0.05$), 3.5 ± 0.53 vs.3.2 ± 4.4 ($p<0.05$), and 3.4 ± 0.55 vs. 3.5 ± 0.48. In CBT group,

the mean scores of social concern, sexual concern, marital concern, rejection of child-free lifestyle, and need for parenthood decreased meaningfully compared to those before starting the therapy. But in fluoxetine group, mean score of women sexual concern out ofthose five main problems of infertility reduced significantly. Also, fluoxetine and CBT reduced depression compared to the control group.[13]

Imanaprast, *et al* (2014) showed the average anxiety score in the experimental group was 34.16 at the beginning of the study, 8.68 at the post test, and 7.79 at the follow up test; this indicated that there was a meaningful difference ($p <0.01$) between the two groups. In contrast, the average anxiety score in the control group was 34.05 at the beginning of the study, 34.53 at the post test, and 26.89 at the follow up test; this did notindicate that there was any meaningful difference.[14]

The findings demonstrated that both treatment techniques provided substantial decreases in depression symptoms, with the CBT group reporting a large drop postintervention that was not sustained with time. However, the other group did not report any meaningful reductions. The EFT group only reported a substantial reduction in symptoms at the 3- and 6-month follow-ups, which indicates that this impact is a delayed one. The examination of the individual instances demonstrated clinically substantial decreases in patients' levels of anxiety following either of the treatments.[15]

Mosalanejad, *et al* was found that the degree of psychological distress in the treatment group was considerably reduced as a result of psychological intervention; the mean score on the DASS was significant in all dimensions.

After the intervention, therewas a substantial gap between the mean scores of the two groups, as determined by ANCOVA (p = 0.001) and also determined by p = 0.001, respectively. Both the PSWQ (p=0.001) and the Inventory Test (p=0.001) revealed statistically significant differencesin the mean scores of the two groups. These findings were supported by the ANCOVA (p=0.009).[16] Other study showed a significant difference between experimental and control groups in the mean score of depression (P <0.05). Also, the results of the post hoc test showed the stable effect of cognitive-behavioral training on reducing depression in infertile women after the intervention and in the follow-up period.[17]

Table 1. The litelature include in this study

Author	Origin	Method	SampleSize	Period Intervention	Result
Golshani, 2021[12]	Iran	Controlled randomizedclinical trial (RCT)	56	4 weeks	The intervention group's mean scores of perceivedstress and anxiety decreased significantly after the intervention (mean difference [MD] = − 7.3; confidence interval: 95%, from − 0.9 to − 5.6; p <0.001). The intervention group had a lower mean depression score than the control, but this difference was not significant (MD = − 1.95; confidence interval: 95% from − 3.9 to 0.2; p = 0.052). The intervention group had a higher pregnant quality of life score than the control (MD = − 5.4; confidence interval [CI] = 95% from 3.4 to 7.4; p < 0.001).
Faramarzi, 2013[13]	Iran	Randomized clinical trial(RCT)	89	10 weeks	The mean of the infertility stress scores in CBT, fluoxetine, and control groups at the beginning and end of the study were as follows, respectively: 3.5 ± 0.62 vs.2.7 ± 0.62 (p<0.05), 3.5 ± 0.53 vs.3.2 ± 4.4 (p<0.05), and 3.4 ± 0.55 vs. 3.5 ± 0.48. In CBT group, the mean scores of social concern, sexual concern, marital concern, rejection of child-free lifestyle, and need for parenthood decreased meaningfully compared to those before starting the therapy.
Imanparast, 2014[14]	Iran	Randomized clinical trial(RCT)	40	4 weeks	At first the average of anxiety score in the experimental group was 34.16, in post test. 8.68 and in follow up test 7.79 and, thus the difference was meaningful(p<0.01), whereas in the control group, this score, at first, was 34.05, in post test
					34.53 and in follow up test 26.89, which did not show any meaningful difference.
Chatwin, 201615	Australia	Pilot study structured as a RCT	57	8 weeks	Both treatments reduced depressed symptoms, with the CBT group reporting a considerable reduction postintervention that did not last. EFT reduced symptoms only at the 3- and 6-month follow-ups. Both therapies improved anxiety clinically.
Mosalanejad, 201216	Iran	RCT	80	12 weeks	It was found that the degree of psychological distress in the treatment group was considerably reduced as a result of psychological intervention; the mean score on the DASS was significant in all dimensions. After the intervention, there was a substantial gap between the mean scores of the two groups, as determined by ANCOVA (p = 0.001) and also determined by p = 0.001, respectively. Both the PSWQ (p=0.001) and the Inventory Test (p=0.001) revealed statistically significant differences in the mean scores of the two groups. These findings were supported by the ANCOVA (p=0.009).
Dastjerdi, 202217	Iran	Quasi-experimental study	50	10 weeks	There was a significant difference between experimental and control groups in the mean score of depression (P <0.05). Also, the results of the post hoc test showed the stable effect of cognitive- behavioral training on reducing depression in infertile women after the intervention and in the follow-up period.

DISCUSSION

Cognitive behavioral therapy, also known as CBT, is a type of psychological treatment that has been shown to be effective for a wide range of problems, including severe mental illness, marital problems, eating disorders, and anxiety disorders, as well as alcohol and drug use problems and problems related to substance abuse. CBT has been the subject of a substantial number of research investigations, all of which point to its ability to significantly enhance both functioning and quality of life. Numerous studies have shown that cognitive behavioral therapy (CBT) is just as successful as, if not more effective than, other types of psychological treatment or psychiatric drugs in treating mental health conditions.[18]

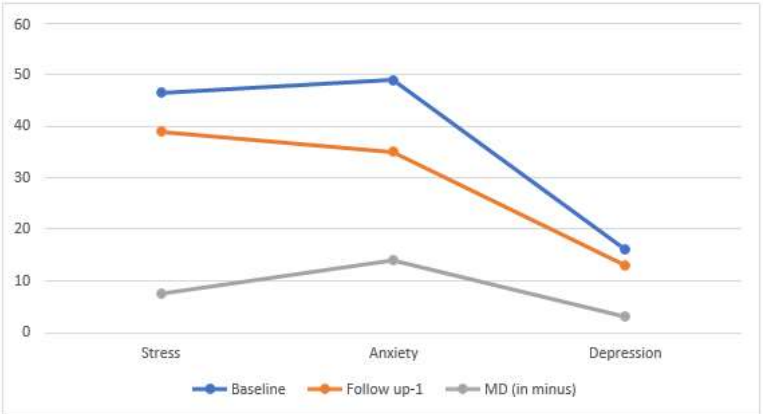

Figure 2. Reduction in levels of stress, anxiety and depression before and after theCBT intervention

Counseling group experienced much less stress and anxiety than the control group 4 weeks following the intervention. These findings were based on the participants' reported levels of stress and anxiety. The control group had a significantly reduced mean depression score 4 weeks after the intervention when compared to the adjusted baseline values; nevertheless, this difference between the groups did not reach statistical significance. In addition to this, the counseling group had a quality of life score that wasmuch higher on average than the control group.[12]

Ying et al. (2016) conducted research to determine how psychological therapies affect the mental health, pregnancy rate, and marital function of infertile couples who are receiving IVF treatment. Cognitive behavioral therapy (CBT), mindfulness, counseling, coping with stress, and positive reassessment, utilized at various stages of in vitro fertilization (IVF) were investigated in 20 trials that are now under investigation. The authors came to the conclusion that none of these strategies were successful in relieving the patients' anxiety and despair while they were undergoing IVF treatment.[19]

The results of the study that came before this one did not match up with the findings of the current study, which can be attributed to the following causes. Ying et al.introduced treatments during the course of treatment, whereas the current study explored the use of CBT on pregnant women who had a history of primary infertility. In addition, none of the reviews explored the psychological consequences of the intervention duringthe two-week wait period, despite the fact that this wait period is one of the most challenging times in the life of infertile couples.[19,20]

CBT counseling, in which new thinking and behavior techniques are taught to replace negative thoughts of patients about self, world, and future, is helpful in identifying stressful situations and using coping strategies.[21] This is because stress perception and response are affected by previous experiences, the current situation, and learned behaviors. Given this, one could draw the conclusion that CBT counseling is beneficial in recognizing stressful situations and using coping strategies. The degree of stress can be reduced by the enhancement of coping skills, the correction of cognitive assessments, and the combination of practices to integrate approaches acquired in the classroom withevents that occur in real life.[22–24]

There are a number of factors that can have a negative impact on the quality of life of a woman who is struggling with infertility, including the financial burden of infertility treatment, the lengthy treatment period, irrational thoughts about having a child, psychological pressures from relatives, and a low educational level. Women who become pregnant after going through these problematic periods have a much higher risk of having a difficult and stressful pregnancy.[25]

According to the findings of the study, the researchers believe that even though infertility can be a source of psychological pressure and put a person's mental health at risk, the severity of this risk is dependent on the individual's psychological make-up as well as their ability to develop coping mechanisms. Therefore, instruction in these abilities to manage emotions has a vital part in lowering the psychological pressures brought on by the stress that is generated by infertility.[26]

CONCLUSION

Research shows that CBT is consistently beneficial for stress and anxiety, whereas it is inconsistent for depression.

REFERENCE

[1]. ASRM. Definitions of infertility and recurrent pregnancy loss: a committee opinion. Fertil Steril. 2013;99(1):63.
[2]. Kamath M, Bhattchraya S. Best Practice & Research Clinical Obstetrics and Gynaecology. Am Coll Obstet Gynecol. 2012;729–38.
[3]. Cunningham FG, Leveno KJ, Bloom SL, Cunningham FG; Leveno KJ; Bloom SL; et al, Cunningham FG, Leveno KJ, et al. Williams Obstetri. 25 ed. New York: The McGraw-Hill Companies; 2020.
[4]. Simionescu G, Doroftei B, Maftei R, et al. The complex relationship between infertility and psychological distress (Review). Exp Ther Med. 2021;306(3):198–202.
[5]. Himpunan Endokrinologi Reproduksi dan Fertilitas Indonesia (HIFERI), Perhimpunan Fertilisasi in Vitro (PERFITRI), Ikatan Ahli Urologi Indonesia (IAUI), Perkumpulan Obsetri dan Ginekologi Indonesia (POGI). Konsensus Penanganan Infertilitas. Jakarta: HIFERI; 2019.
[6]. Luk BH-K, Loke AY. The Impact of Infertility on the Psychological Well-Being, Marital Relationships, Sexual Relationships, and Quality of Life of Couples: A Systematic Review. J Sex Marital Ther. 2015;41(6):610–25.
[7]. Dooley M, Dineen T, Sarma K, Nolan A. The psychological impact of infertility and fertility treatment on the male partner. Hum Fertil (Camb). September 2014;17(3):203–9.
[8]. Robinson GE, Stewart DE. The psychological impact of infertility and new reproductive technologies. Harv Rev Psychiatry. 1996;4(3):168–72.
[9]. Ramezanzadeh F, Aghssa MM, Abedinia N, Zayeri F, Khanafshar N, Shariat M, et al. A survey of relationship between anxiety, depression and duration of infertility. BMC Womens Health. November 2004;4(1):9.
[10]. Herbert DL, Lucke JC, Dobson AJ. Depression: an emotional obstacle to seeking medical advice for infertility. Fertil Steril. Oktober 2010;94(5):1817–21.
[11]. Dyer SJ. The value of children in African countries: insights from studies on infertility. J Psychosom Obstet Gynaecol. Juni 2007;28(2):69–77.
[12]. Golshani F, Hasanpour S, Mirghafourvand M, Esmaeilpour K. Effect of cognitive behavioral therapy-based

counseling on perceived stress in pregnant women withhistory of primary infertility: a controlled randomized clinical trial. BMC Psychiatry [Internet]. 2021;21(1):278. Tersedia pada:https://doi.org/10.1186/s12888-021-03283-2

[13]. Faramarzi M, Pasha H, Esmailzadeh S, Kheirkhah F, Heidary S, Afshar Z. The effect of the cognitive behavioral therapy and pharmacotherapy on infertility stress: a randomized controlled trial. Int J Fertil Steril. Oktober 2013;7(3):199– 206.

[14]. Imanparast R, Bermas H, Danesh E, Ajoudani Z. The effect of cognitive behaviortherapy on anxiety reduction of first normal vaginal delivery. 2014;

[15]. Chatwin H, Stapleton P, Porter B, Devine S, Sheldon T. The effectiveness of cognitive behavioral therapy and emotional freedom techniques in reducing depression and anxiety among adults: a pilot study. Integr Med A Clin J. 2016;15(2):27.

[16]. Mosalanejad L, Khodabakhshi Koolaee A, Morshed Behbahani B. Looking out for the secret wound: the effect of e-cognitive group therapy with emotional disclosure on the status of mental health in infertile women. Int J Fertil Steril. Juli 2012;6(2):87–94.

[17]. Dastjerdi R, Jami M, Khazaei Z. Effectivness of Cognitive-behavioral Therapy on Depression in Infertile Women. Heal Technol Assess Action [Internet]. 19 April 2022;5(3 SE-Articles).Tersedia pada:https://htainactio n.tums.ac.ir/index.php/hta/article/view/109

[18]. Benjamin J; Sadock M. Kaplan & Sadock's Comprehensive Textbook of Psychiatry. 9 ed. Philadelphia: Lippincot Williams Wilkins; 2009.

[19]. Ying L, Wu LH, Loke AY. The effects of psychosocial interventions on the mental health, pregnancy rates, and marital function of infertile couples undergoing in vitro fertilization: a systematic review. J Assist Reprod Genet. Juni 2016;33(6):689–701.

[20]. Pour TH. The effect of cognitive behavioural therapy on anxiety in infertile women. Eur J Exp Biol. 2014;4(1):415–9.

[21]. Weinstein N, Ryan RM. A self-determination theory approach to understanding stress incursion and responses. Stress Heal. 2011;27(1):4–17.

[22]. Hasan Zadeh LifShagard M, Tarkhan M, Taghi Zadeh ME. Effectiveness of stress inoculation training on perceived stress in pregnant women with infertility. J Holist Nurs Midwifery. 2013;23(2):27–34.

[23]. Edition F. Diagnostic and statistical manual of mental disorders. Am Psychiatr Assoc. 2013;21(21):591–643.

[24]. Wright JH, Brown GK, Thase ME, Basco MR. Learning Cognitive-Behavior Therapy: An Illustrated Guide, Second Edition [Internet]. American Psychiatric Association Publishing; 2017. (Core competencies in psychotherapy). Tersedia pada: https://books.google.co.id/books?id=c_HEDgAAQBAJ

[25]. Amanati L, Allami M, Shokrabi S, Haghani H, Ramazanzade F. Quality of life and influencing factors among infertile women. Iran J Obstet Gynecol Infertil. 2010;12(4):25–31.

[26]. Deka PK, Sarma S. Psychological aspects of infertility. Br J Med Pract. 2010;3(3):336.