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ACUPRESSURE AND YOGA COMBINATION CAN REDUCE ANXIETY DURING PREGNANCY: A SYSTEMATIC REVIEW

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ABSTRACT

Background: *Untreated anxiety during pregnancy causes the health problems among mothers and the fetus. Complementary and Alternative Medicine (CAM) such as acupressure and yoga is seen as the alternatives to deal with this anxiety. This study aims to determine if the combination of acupressure and yoga is effective to reduce anxiety during pregnancy.*

Method: *This study was a systematic review using the guidelines of the PRISMA. Articles were obtained from electronic databases Scopus, Science Direct, and PubMed by identifying published articles from January 2013 to March 2019. Articles were identified using keywords 'acupressure', 'prenatal yoga', and 'anxiety in pregnancy'. All articles included in this study were only those who used intervention research design in the form of an RCT and pilot study.*

Results: *Ten of 1186 articles met the intended criteria in this study. The results showed that acupressure and yoga have significant benefits in reducing anxiety among pregnant women. It was also found that this combination potentially prevented the postpartum depression.*

Conclusion: *Acupressure and yoga interventions can be combined as non-pharmacological therapy to reduce anxiety during pregnancy. Further research with more specific interventions is needed to provide evidence of reducing anxiety during pregnancy.*

Keywords: *acupressure, prenatal yoga, anxiety during pregnancy*

INTRODUCTION

Pregnancy and childbirth are critical periods in a woman's life. This period has become a progressive phase that disrupts the stability of biology, psychology, and social women so that it needs adjustment for a new role in the relationship between parents and their babies, especially mothers[1]. Adaptation of the physiology and psychology of pregnancy causes anxiety. This can cause mental and physical tension which will cause unnatural muscle and joint rigidity[2].

Despite scientific advances regarding physical problems in pregnancy, psychological problems are still a major problem in the health of pregnant women[3]. At present, the incidence of depressive symptoms during pregnancy has been reported from 3% to 51%[4]. The painful experience labor associated with unexpected medical interventions, severe illness, or fear of death cause anxiety for the mother which ultimately causes anxiety disorders [3].

Around the world, as many as 350 million pregnant women have anxiety and psychological disorders that can reduce the quality of pregnancy outcomes[5]. Anxiety during pregnancy that is not managed seriously will have a side effect on the mother and the fetus. Anxiety in pregnancy can cause psychiatric disorders, preeclampsia, abortion, premature birth, low birth weight, postpartum depression, increased risk of heart rhythm disorders, decreased the fetal quality and delay in the mental development of

children and even personality disorders to adulthood [6]. Efforts to deal with anxiety can be with Complementary and Alternative Medicine (CAM) treatment and commonly done by midwives such as therapeutic massage, aromatherapy, acupuncture/acupressure and yoga[7].

Acupressure is a method of Chinese medicine that has been reported in randomized clinical trials (RCTs) which based on systematic reviews can also be used to reduce various health problems including anxiety in patients[8]. Acupressure is also a noninvasive method to eliminate imbalances in vital energy, relieve pain, reduce muscle tension, improve blood circulation and vital activities[3]. According to several studies, it has been reported that yoga also has a positive effect on the well-being of pregnant women including over less stress, anxiety, and pain, discomfort, less painful labor and less time in labor[9]. In this context, interesting interventions such as yoga have been shown to play a major role in reducing depression, anxiety, and stress in adult individuals and postpartum women who are affected by depression[10]. This can occur through the increased vagal activity because an increase in vagal activity has been associated with a decrease in depression and cortisol level[9].

Today's holistic care is much in demand by people because treatment with antidepressants is still debated between the benefits and risks for pregnant women and their fetuses[9], so that there is still a need to develop non-pharmacological interventions especially in assisting safe and comfortable pregnancy and childbirth processes. Holistic care has fewer side effects than pharmacological treatment[7]. In Japanese studies showed that the acupressure technique can prevent depressive symptoms in women with pregnancy-related to anxiety. However, this has not been statistically significant and suggests that perinatal mental health care can combine acupressure therapy with drugs or psychotherapy in the treatment of depression[11], so this study aims to determine the effectiveness of the combination of acupressure and yoga to overcome anxiety during pregnancy with a systematic review and follow the guidelines of the PRISMA statement guidelines.

METHODS

Search Strategy

Systematic Review uses a guide based on the Preferred Reporting Item for Systematic review and Meta-Analysis (PRISMA) [12]. Electronic database were searched during the week of 25 – 31 March 2019 independently by three authors. Articles are identified through the Scopus, Science Direct and PubMed databases published in the range January 2013 to March 2019 using English. Search terms in databases use keyword combinations [1] Acupressure OR [2] Prenatal Yoga AND [3] Anxiety in pregnancy.

Eligibility Criteria

The main inclusion criteria include pregnant women aged 18-45 years who experience anxiety and the presence of acupressure or yoga that is used as a non-pharmacological intervention to overcome anxiety and anxiety included in the research outcome. We also limit our study to only taking a randomized controlled trial (RCT) and pilot studies that study the effectiveness of acupressure and yoga to deal with anxiety during pregnancy because the level of evidence is strong if the findings are consistent among several RCTs with a low risk of bias[12]. The exclusion criteria are that the author screens the title and abstract of the study that is not full and irrelevant text. We have language restrictions and we only review studies written in English.

Data extraction

Protocol standard for selecting research studies using PRISMA for systematic review followed through screening by removing duplication using Mendeley's software assistance, then conducting title-based and abstract screening for the elimination of articles with irrelevant topics. Articles found are then identified based on the inclusion and exclusion criteria that have been determined by reading the text as a whole. Articles that have met the criteria are used in this systematic review.

Identifying records through 3 databases found 1186 documents consisting of Science Direct obtained 1159 records, Scopus totaling 11 records and PubMed totaling 16 records. The document screening is done by removing the duplicate so that it becomes 1168 records. The records are excluded based on the title and abstract not the relevant topic into 911 records. Then proceed with screening full-text articles assessed for their eligibility to get 257 records. Full-text articles are excluded, arguing that there are 247 documents based on a review, not English, no relevant study designs and no relevant outcome. The last study included in the qualitative synthesis obtained 10 documents entered in a systematic review.

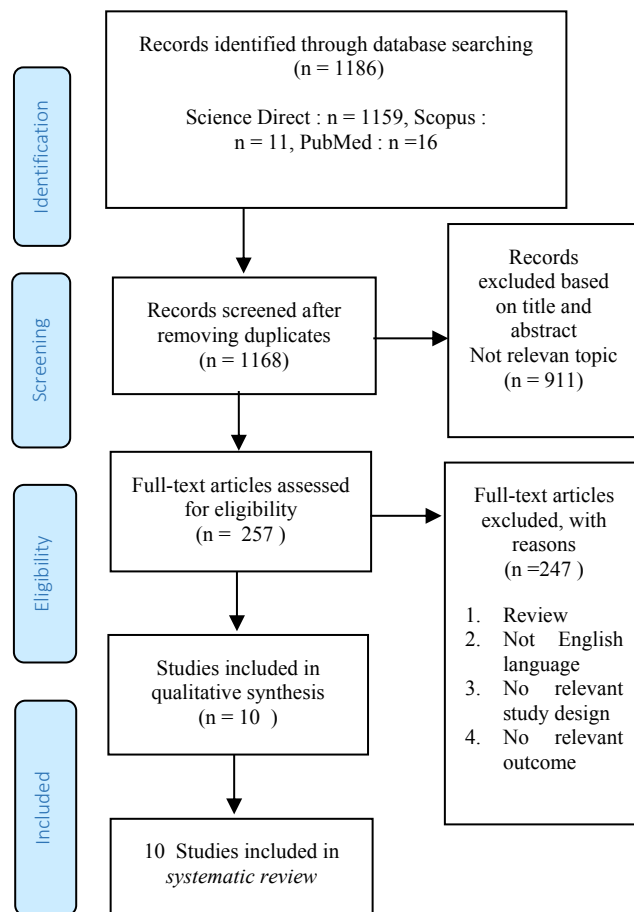


Figure 1: Flow Diagram

RESULTS

A total of 10 articles were identified to be included in this systematic review. Searching through the Scopus, Science Direct, and PubMed found 1186 articles. After duplication screening, there were 1168 articles left. Of these, 911 articles were eliminated because of irrelevant topics. Fulltext articles were identified and eliminated 247 articles on the grounds that they were review articles, publications were not in English, research designs and outcomes were irrelevant. See flow diagram Figure 1.



Table 1: The Result of Systematic Review

No.	Title	Author	Year	Methods	Sample	Intervention	Findings
1.	Effect of Acupressure on Maternal Anxiety in Women With Gestational Diabetes Mellitus: A Randomized Clinical Trial	Farideh Bastani, PhD, MSc, BSc[13]	2015	RCT	60 pregnant women with GDM.	28 women in the experimental group who received acupressure at the correct point (P7).	In the acupressure group, there was a significant decrease between the mean scores before and after intervention in anxiety for MAQ and its severity in VASA (p = 0.001) with a difference in change of 3.96 points and 3.47 points.
2.	Acupressure on Self-Reported Sleep Quality During Pregnancy	Isabella Neri, Raffaele Bruno, Giulia Dante, Fabio Facchinetti[14]	2015	RCT	235 pregnant women agreed to participate in this study, 134 were accepted as the experimental group and 101 women became the control group.	Midwives advise women to do pressure on the wrist (H7) half an hour before going to bed and removing it after waking, for 10 consecutive days and after that every day is odd.	Studies show that acupressure in H7 is applied for 2 weeks to improve sleep quality in pregnant women and reduce anxiety in pregnant women in the 3rd trimester of pregnancy.
3.	Effect of Acupressure, Acupuncture and Moxibustion in Women With Pregnancy-Related Anxiety and Previous Depression: A Preliminary Study	Shunji Suzukia, Chiharu Tobe[11]	2017	A preliminary study	48 women with anxiety related to pregnancy and depression before giving birth at ≥ 22 weeks' gestation.	Therapy was Acupressure, acupuncture, and moxibustion given to 10 women each during pregnancy and postpartum.	P <0.05 was considered significant so that acupressure, acupuncture, and moxibustion (oriental treatments) may be useful for pregnant women who need perinatal mental health care and acupuncture can be an effective treatment in reducing the severity of anxiety and depression before.
4.	Effect of Acupressure on Preoperative Cesarean Section Anxiety	Foziyeh Abadi, Faezeh Abadi, Zhila Fereidouni, Mehdi Amirkhani, Shahnaz Karimi, Majid Najafi Kelyani [15]	2018	RCT	60 patients facing surgery were randomly divided into two groups of 30 patients each.	30 patients in the intervention group received simultaneous acupressure at the Yintang acupressure point, and HE-7 for 5 minutes before surgery.	The average anxiety score of the two groups proved not significantly different before the intervention (p = 0.859), while the significant difference between the average anxiety score of the two groups was observed after intervention (p = 0.001), indicating that acupressure reduced patient anxiety before surgery.
5.	Tai Chi/Yoga Reduces Prenatal Depression, Anxiety And Sleep Disturbances	Tiffany Field, Miguel Diego, Jeannette Delgado, Lissette Medina [16]	2013	RCT	92 pregnant women with prenatal depression were randomly recruited from two prenatal ultrasound clinics.	37 mothers received tai chi/yoga treatment for 20 minutes each session per week for 12 weeks.	The results showed that tai chi/yoga showed a greater decrease in depression scores in CES-D, anxiety with STAI scale and sleep disturbances on the Snyder-Halpern and Verran scales.



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No.	Title	Author	Year	Methods	Sample	Intervention	Findings
6.	Yoga And Social Support Reduce Prenatal Depression, Anxiety And Cortisol	Tiffany Field, PhD, Miguel Diego, PhD, Jeannette Delgad, BS, Lissette Madinah, BS [9]	2013	RCT	A total of 92 women with pre-depression 22 weeks gestation.	The experimental group followed yoga for 20 minutes (only physical poses) once per week for 12 weeks.	At the end of the first and last session, yoga groups reported less depression, anxiety, anger, back and leg pain compared to social support groups.
7.	Effect Of Integrated Yoga On Anxiety, Depression & Well Being In Normal Pregnancy	M. Satyapriya, R Nagarathna, V. Padmalatha, HR Nagendra[17]	2013	RCT	96 women with 20 weeks' gestation with normal pregnancies.	49 yoga groups practice integrated yoga 2 hours/day (3 days/week) for one month.	The practice of integrated yoga in the second and third trimesters is more effective than antenatal training in reducing anxiety, depression and improving the pregnancy experience.
8.	A Randomized Controlled Trial Of Yoga For Pregnant Women With Symptoms Of Depression And Anxiety	Kyle Davis, Sherryl H. Goodman, Jenn Leiferman, Mary Taylor, Sona Dimidjian [6]	2015	RCT	A total of 46 women were pregnant with symptoms of depression and anxiety.	87% of participants assigned to yoga groups received yoga interventions for 8 weeks.	Prenatal yoga is found as an appropriate and acceptable intervention and is associated with a reduction in symptoms of anxiety and depression. However, prenatal yoga only significantly outperforms TAU (treatment as usual) on reducing negative impacts.
9.	The effect of prenatal Hatha yoga on affect, cortisol and depressive symptoms	Svetlana Bershadsky, Linda Trumpfheller, Holly Beck Kimble, Diana Pipaloffc, Ilona S. Yim [10]	2014	RCT	A total of 51 nulliparous pregnant women, between 12 and 19 weeks' gestation.	Yoga groups participate in the Hatha pregnancy 90 minute yoga session	The hormone cortisol level was lower (p <.01) and the positive effect was higher (p <.001) in the yoga group compared to the usual activity days. The findings indicate that prenatal Hatha yoga can improve mood during pregnancy and potentially be effective in reducing symptoms of postpartum depression.
10.	Effects Of Antenatal Yoga On Maternal Anxiety And Depression: A Randomized Controlled Trial	James J. Newham, Ph.D., Anja Wittkowski, Clin. Psy. D. Janine Hurley, John D. Aplin, Ph.D., and Melissa Westwood, Ph.D [18]	2014	RCT	As many as 59 primiparous pregnant women and low risk	The experimental group followed yoga for 8 weeks and the control group was given treatment as usual.	Antenatal yoga decreases anxiety levels and cortisol hormone levels after one session and this effect is consistent over time. Antenatal yoga is associated with a significant reduction in fear of childbirth, and has the potential to prevent an increase in symptoms of depression.

The study included 861 participants in both acupressure and yoga-related studies consisting of nine RCT studies and one preliminary study. All study participants were pregnant women aged 18-45 years. Eight studies recruited participants who experienced anxiety [6, 9–11, 13, 14, 16, 18] and one study in patients who would face surgery [15]. The last study involved participants in healthy pregnant women [19]. Nine studies recruited participants in the second and third trimesters [6, 9–11, 13–16, 18, 19].

The eternal Foziyeh et al. [15] had a size 0.987 effect greater than the Farideh Bastani study [13] with 0.703 effect size from four studies that discussed acupressure so that acupressure at Yintang point and HE-7 significantly reduced anxiety while the other two studies cannot be compared. In an article that contains acupressure, different backgrounds that involve a certified nurse who has attended acupressure training [13], midwives who have previously been trained by acupuncturists [14] and acupressure are performed by trained individuals into the operating room with the supervision of an acupuncturist [15].

The M. Satyapriya et al. [19] study of six studies on prenatal yoga had an effect of a research size of 0.860 and greater than other studies so that the practice of integrated yoga in the second and third trimesters was certainly more effective than antenatal training in reducing anxiety, depression and also enhance experience during pregnancy. In the study, it was stated that the experimental group received yoga interventions for 12 weeks [9, 16] 8 weeks [6, 10, 18] and there was one month [19]. Although there are differences in duration yoga interventions, all trials have a single yoga stimulation. The most effective yoga is done by women pregnant for 2 hours/day (3 days/week) for one month [19]. In articles containing yoga, all yoga interventions in research are given by prenatal yoga instructors who are experts [6, 9, 10, 16, 18, 19].

Table 1 represents the characteristics and intervention content of articles reviewed. Two acupressure-related studies in the intervention group were given emphasis on the correct point whereas in the control group emphasis was placed on false points [13, 15] and two studies did not provide interventions at the false points in the control group [11, 14]. Not all acupressure articles report the reasons for acupressure, location, and frequency of true and false acupoints used. Only one of the studies determined the duration of the retention pressure, provided a detailed description of the method/material used for acupressure and reported other components such as details of other interventions given to group acupressure [13].

All articles evaluated the effect of interventions on anxiety using a structured questionnaire. The anxiety of pregnant women can be measured by the Maternal Anxiety Questionnaire (MAQ) and the Visual Analog Scale for Anxiety Severity Level (VASA) [13]. In other studies anxiety was measured by the STAI scale [6, 9, 16, 18, 19] and STAXI [16]. In the study of Svetlana Bershinsky et al. [11] the assessment of anxiety and depression was assessed by CES-D (Center Epidemiologic Studies Depression Scale). M. Satyapriya, R et al. [19] used HADS which is a self-rating scale in his research. Most research uses STAI to assess anxiety.

All studies report positive effects of acupressure and yoga to eliminate anxiety during pregnancy. There were no adverse events reported during the study either in acupressure or yoga articles. In accordance with the suggestions in previous studies that an acupressure program when added to yoga simultaneously, seems to be effective in reducing depression and anxiety that can affect one's pain perception [11].

DISCUSSION

A number of randomized controlled trials and preliminary studies explaining acupressure and yoga can be combined as interventions to overcome anxiety in this review. There are ten studies in which participants who were diagnosed with anxiety all had positive results that supported the intervention of acupressure and yoga. The combination of acupressure and yoga can regulate the vital energy flow in the energy meridians so that physical, mental, spiritual balance occurs and not only focus on anxiety. The yoga movement which is accompanied by an emphasis on the acupressure points can open up a block of energy blockages that can overcome anxiety during pregnancy.

The results showed that acupressure during pregnancy resulted in a significantly greater reduction in the size of the primary outcome (anxiety and severity) in the experimental group compared to the placebo group in the post-intervention assessment[13]. The opposite results have also been reported in Ming, Kuo, Lin, & Lin's study that acupressure did not succeed in eliminating anxiety because at the measurement of anxiety with VASA pre and post-acupressure intervention in the control group found the VASA score of the control group was not greater than the VASA score in the experimental group[13]. To increase the effectiveness of acupressure in overcoming anxiety during pregnancy can be done in combination with alternative therapies such as prenatal yoga. Yoga is a combination of stretching and forming postures (asana) with breathing exercises (pranayama)[20]. Pranayama is the most important part of yoga to overcome depression in pregnancy because it is slow, deep breathing and combined with a number of movements that will activate the parasympathetic system to work against the nervous system, so that the symptom system works optimally blocking the release of cortisol which is one of the causes of depression[21]. The same mechanism also has an effect on pregnancy, namely the occurrence of stretching in the lung and vagus nerves resulting in an increase in cardiac output and heart rate to supply oxygen to the mother and fetus, as well as an increase in blood volume[19]. Variability of heart rate or vagal activity increased in the yoga group from a baseline of 64% at week 20 to 150% at week 36, indicating increased relaxation so that heart rate frequencies of stress decreased after deep relaxation at 36 weeks in yoga groups. Yoga can also be an effective exercise for pregnant women with low indications in advanced pregnancy[16].

Cortisol, estriol, and progesterone are increased in women who experience prenatal depression and have the potential to be reduced by prenatal intervention[9]. According to Kyle Davis et al. [6] it is possible that yoga might be effective for symptoms of depression and anxiety during pregnancy, but not specific compared to the activities of other women who might be involved in reducing symptoms of anxiety or depression. This is in line with the research of Bershadsky et al. And Newham et al., Showing that is a lower cortisol hormone and has a positive effect on prenatal yoga groups than the usual activity group. The findings show that prenatal yoga can improve mood during pregnancy and potentially reduce symptoms of postpartum depression. This occurs in women who are involved in moderate to high levels of physical activity because regular involvement in moderate-intensity physical activity has been shown to be an effective treatment modality for depression[6]. To get effective results, acupressure can be added to any yoga session because physiological, systemic and local changes can create calm and balance throughout the body and mind. It also reduces stress symptoms. Although the main mechanism of acupressure is not yet known, several studies show this leads to the release of neurotransmitters such as serotonin which can affect individual calmness[3].

In addition, it has been proven that reduced perceived stress and better autonomic adaptability during normal pregnancy after performing integrated yoga[19]. Routinely performing prenatal yoga shows a better ANS (Autonomic Nervous System) plasticity and its ability to restore a state of basic relaxation quickly after a stress response. Prenatal yoga can also lead to a better quality of life and much better interpersonal relationships[22] which refers to a positive psychological state. Thus, these psychological changes can explain the physiological changes observed as better results so that yoga with ANS programming makes the fetus healthier and helps in preventing diseases associated with autonomic nervous system hyperactivity in its offspring[17].

Acupressure combined with yoga together seems to be effective in reducing anxiety which can affect one's pain perception because the mind and body are unique entities and are considered units that cannot be shared and interconnected. This perspective is accepted by neuroscientists and psychologists and describes "psycho-neuro-endococchino-immunology" which is an interacting system [23] that can affect the mind, body perception, posture and stimulate the immune system. Anxiety during pregnancy that is not managed seriously will have a side effect on the mother and the fetus. Anxiety in pregnancy can cause psychiatric disorders, preeclampsia, abortion, premature birth, low birth weight, postpartum

depression, increased risk of heart rhythm disorders, decreased the fetal quality and delay in the mental development of children and even personality disorders to adulthood[6].

The urgency of using a combination of acupressure and yoga as a therapy requires further investigation, but it is safe and well tolerated by respondents as a therapy for non-pharmacological modalities. These interventions will be more useful if done regularly and over a longer period of time. It is hoped that a series of yoga efforts can reduce maternal anxiety in pregnancy to postpartum because yoga can provide peace of mind, relaxation, and comfort to the mother and increase the confidence of mothers in caring for their babies and affect the release of hormone prolactin and oxytocin for breast milk production.

This study has several limitations, now despite several low-quality controlled trials, observations have supported the fact that acupressure and yoga are effective therapies that can overcome problems during pregnancy. No studies have been conducted on pregnant women given a combination of acupressure and yoga interventions. We also discuss the sample size in the articles reviewed too small to discuss the effects of acupressure and yoga to overcome difficulties during pregnancy and also a serious challenge from this study. However, the combination of acupressure and yoga has support for preventing depression in previous women. Therefore, this report must be improved to discuss more the long-term effects of a combination of acupressure and yoga to overcome difficulties during pregnancy. This study also has limitations on heterogeneity in terms of the type of research and measurement of anxiety.

CONCLUSIONS

This review explains the combination of acupressure and yoga in pregnant women is a new form related to the holistic concept, the relationship of body, mind, and spirit by processing complete breathing, exercising the pelvic floor muscles, and also fostering thought with movement and movement of fingers at the meridian points in vital energy flow. Interventions with acupressure and yoga have significant benefits in reducing the debate in pregnant women and preventing postpartum depression and can be combined as a safe non-pharmacological treatment. Further research is needed with the RCT design for interventions that are more specific to the combination of acupressure and yoga to provide evidence and complete the results of this systematic review.

CONFLICT OF INTEREST

No conflict of interest.

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