



Vol. 5, Issue 3, 193-200, 2016

Academic Journal of Psychological Studies

ISSN: 2333-0821

ajps.worldofresearches.com

The effectiveness of yoga exercises on childbirth anxiety reduction and the improvement of mental health in pregnant women

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A B S T R A C T

This study aimed to evaluate the effectiveness of yoga exercises on mental health in pregnant women. In a pretest - posttest plan with control group, taking into account the level of confidence (0.95), the test power (0.80) and volume effects (0.50), a random sample of 40 pregnant women were selected and divided into two groups of 20 people. After pre-test, the experimental group was trained through yoga. The data collection tool was the symptoms scale list of mental disorders-short form (SCL-25). Analysis of covariance was used for inferential analysis of data and testing the research hypotheses. The results of analysis of covariance showed that practicing yoga can improve overall mental health of intervention group in the post-test. The results of analysis of covariance on the mental health variable showed that yoga exercises on components of anxiety, depression and physical symptoms at the level of (0.01) and the components of interpersonal sensitivity, anxiety and psychosis at (0.05) is significant.

Keywords: Yoga, Pregnancy, Mental Health.

INTRODUCTION

Pregnancy involves some psychological and social changes that will impact each person differently. In general, pregnancy is a stressful period and the impact of pregnant women of the different anxieties of life increases in this period. It is clear that anxiety is part of life and is the necessary condition for all living things as an appropriate response to threatening situations.

The point to be mentioned is that there is a border between the natural stress and stress disease and this border is different from one to another so that a person can tolerate a high level of stress in life and another person suffer from this condition¹. The most important factor based on mental analysis theory as the cause of all mental diseases is stress. Options or cases should enter life in order to

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DOI: [In pressing](#)

To cite this article: Astarabadi, M., Taqinezhad, N. (2016). The effectiveness of yoga exercises on childbirth anxiety reduction and the improvement of mental health in pregnant women. *Academic Journal of Psychological Studies*, 5 (3), 193-200.

control the stress which has a dominant role in the mental analysis filed. In the Freud view, stress is a momentum. Meaning that if the body is infected by a wound, inflammation or disease, the primary symptom is fever. If the person is mentally ill, the primary symptom is stress and stress is considered as both the cause and the effect of disease. It means that most mental illnesses are caused by mental anxiety².

Today, it is known that many widespread diseases are mostly related to not having to cope with anxiety rather than events caused by germs, viruses, harmful substances or any other external factor³. It is worth mentioning that stress targets most vulnerable people but the strongest people are not even safe².

Since women tolerate many mental-physical changes in their pregnancy and their influence for different stresses in life increases in this period, this period becomes very important mentally⁴. So that the evidence derived from epidemiological studies all around the world show that mood disorders in women is twice that of men, culminating in a period of pregnancy and childbirth⁵. At the beginning of pregnancy, the woman has worries about accepting the pregnancy, physical health, losing fitness and changes in the familial and social roles that cause the emergence of stress and the symptoms of stress may be shown in her directly or indirectly⁶.

Research shows that moderate exercise and yoga techniques in pregnancy and breastfeeding help to reduce anxiety during this period. The trial that was conducted on 236 pregnant women found that women who have been practicing yoga daily have less stress compared with other pregnant women who suffer from anxiety or depression after two weeks. The present study was to investigate the question of whether the practice of yoga is effective in reducing anxiety and improving the mental health of pregnant women or not?

METHODOLOGY

This study is of experimental research and pretest – posttest plan with control group. Pretest - posttest with control group plan is a quasi-experimental in which pre-test effect can be controlled. In this plan, with the implementation of the pre-test, a statistical control for initial differences takes place in the dependent variable. The studied statistical population in the present study includes pregnant women referring to Mehr Madar institute in Bandar Abbas (Iran).

The sample size was determined considering the power of test (0.80), the effect size (0.50) and reliability (0.05) and using Cohen's table to compare two groups: For each group, 20 patients are suggested considering the drop probability in the primary selection, 20 people are considered for each group and 40 people in total.

After the implementation of pre-test and matching of the two groups based on the variables of pregnancy period, the number of pregnancy, age and the type of previous childbirths, one of the groups were selected as the test group and the other as the control group.

Revised Short Form of Symptoms Scale List SCL-25

The questionnaire is the short form of SCL-90 which is made with the aim of putting the short form available and valid for assessing psychiatric disorders using SCL-90. 25-item has a Likert version with the same as SCL-90 (no (0), rarely (1), partly (2), high (3) and strongly (4). It assesses eight subscales of somatization (6 questions), obsession and compulsion (3 questions), interpersonal sensitivity (3 questions), Depression (2 questions), Anxiety (3 questions), Panic (3 questions), Paranoia (1 question) and discrete-oriented psychotherapy (3 questions) and involves an additional article (Article 18) that its score is only calculated in the total score.

Yoga intervention program

After selecting intervention group, they are prepared to participate in training classes to do yoga exercises. Since pregnancy has its especial physical and mental conditions in each month, yoga exercises are trained considering the conditions of each month of pregnancy of the test group. In general, the pregnancy period is divided into three phases; the first trimester, second trimester and third trimester. Specific changes in the mother and fetus occur at any stage and acute problems of techniques and asana change with respect to mother and fetal distress.

- First trimester

Relaxation:

- 1) It causes the relaxation of the body and mind
- 2) It compensates his fatigue and lack of energy
- 3) It facilitates doing household chores or Asana

4) It reduces the severity of nausea and vomiting. With relaxation, the mother is not only able to come over physical problems such as fatigue and digestive problems but also it improves her mood and mental status and reduces sensitivity severity, irritability and nervousness.

All asana in the first three months is applicable and will not be followed by any damage or danger. Of course if the mother has practiced yoga before pregnancy and has the required ability to do difficult moves, she can benefit these asana and if this is the first time the mother practices them, she can start with easy and primary asana and develop them gradually in accordance with their bodies. In cases in which mother suffers bloodshed, hypertension and lung problems and the

pregnancy is dangerous, we should use helping asana according to the condition in order not to impose any pressure on the mother.

- Second trimester

Relaxation and asana done on the abdomen, waist, hip and total body skeleton, are very helpful to improve maternal status, strengthen muscles and make joints flexible. These exercises prevent the severe change in the body status by strengthening the muscles of waist, feet and stomach as well as giving a correct and true status to mother (these muscle will help mother in easy childbirth). On the other hand, the body can be positioned in the status of easy and without pain childbirth by training the joints and increasing flexibility and mobility.

Moreover, over weight is made tolerable for the mother by trained muscles and joints and her pain and fatigue is reduced.

- Third trimester

Performing Asana related to digestive system can prevent constipation leading to hemorrhoids by massaging the stomach and intestines of the digestive tract.

RESULTS

Table 1 shows descriptive mean statistics and standard deviation of pre-test and post-test scores in the intervention and control groups anxiety.

Table1. Descriptive mean statistics and standard deviation of pre-test and post-test scores in the intervention and control groups anxiety

Variable	Test group				Control group			
	Pretest		Posttest		Pretest		posttest	
	Mean	Std. deviation	Mean	Std. deviation	Mean	Std. deviation	Mean	Std. deviation
Anxiety	7.20	2.12	4.35	1.52	7.54	2.04	6.77	1.27
Depression	4.92	2.27	2.17	1.17	4.21	2.11	4.12	1.06
Panic	4.11	2.20	3.27	1.62	4.65	2.34	4.24	1.19
Interpersonal sensitivity	4.77	2.12	3.06	2.02	4.32	2.28	4.11	2.25
Compulsion and obsession	5.02	1.75	3.28	2.24	5.57	1.20	5.44	2.74
Psychosis	5.74	1.77	3.18	1.84	5.02	2.20	5.89	1.92

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Somatization	4.54	2.34	2.52	1.79	4.29	2.06	5.57	2.27
Paranoia symptoms	2.34	1.50	2.15	1.85	4.77	2.42	2.67	2.18

Multivariate analysis of covariance or MANCOVA was used to analyze the effectiveness of yoga practice on mental health component, according to multivariate dependent variables (mental health component). One of the assumptions of this analysis is the homogeneity of covariance of the dependent variables in groups that is checked by M box test. The confirmation of the null hypothesis in this test shows the confirmation of the homogeneity of covariance. Table 2 shows the results of M box test to check the homogeneity of covariance of dependent variables in the groups.

Table2. The results of M-box test to check the homogeneity of covariance of dependent variables groups

Index	Value
M box	74.02
F	1.49
df1	8
df2	155.37
P value	0.17

According to the results of M box test, the null hypothesis is confirmed and it can be said that covariance homogeneity of dependent hypotheses variables in the group are established. Multivariate analysis of covariance (MANCOVA) by comparing the pre-test and post-test scores was performed to evaluate the effectiveness of the intervention. Table 3 shows the results of multivariate analysis of covariance on the mental health component by comparing the pre-test and post-test scores show. Table 3 shows summary results of multivariate analysis of covariance on the post-test scores of mental health component with the comparison of pre-tests.

Table3. Summary results of multivariate analysis of covariance for comparing the post-tests of mental health component with the comparison of pre-tests scores in the intervention and comparing groups

Effect	Test	Value	F	df hypothesis	df error	p
Group	Philai effect	0.82	10.24	9	1	0.01

Contents of Table show that there is a significant difference between intervention and control groups in at least one of the dependent variables (mental health component). Covariance analyses in the context of MANCOVA on the dependent variable were done to spot the difference point. Table 4 suggests covariance analysis in the context MANCOVA to compare the mental health component post-tests by comparing the pre-tests in the intervention and control groups.

Table4. Results of covariance analysis in the context of MANCOVA to compare with post-tests of the mental health component by comparing post-tests of the intervention and comparison groups

Effect	Dependent variable	Mean squares	F	p	Eta square
Group	Anxiety	324.20	7.24	0.01	0.12
	Depression	345.72	5.19	0.01	0.095
	Sensitivity	270.28	2.62	0.02	0.011
	Somatization	211.84	3.82	0.01	0.042
	Obsession	198.02	1.05	0.09	0.007
	Panic	140.74	2.98	0.04	0.029
	Psychosis	567.88	3.10	0.04	0.032
	Paranoia symptoms	342.19	0.86	0.17	0.0092

According to the obtained results, we can say that practicing yoga is significant on anxiety component (7.24), depression (5.19) and somatization (4.82) at (0.01) and the components of interpersonal sensitivity (2.62), panic (2.98) and psychosis (3.10) at (0.05). According to Eta square, it can also be said that the greatest effect has been on the anxiety component (0.12) and depression (0.095).

CONCLUSION

Breeding and the continuation of the human offspring is an important duty the burden of which is upon the shoulders of women. Accordingly, midwifery and childbirth has always been considered and changed by human beings due to its vital importance. Unfortunately, even in the present day, women face many issues and problems of childbearing including the quality of pregnancy, pregnant women relations with her husband, children's health and his future and delivery way. Also, numerous cases of bleedings during pregnancy, abortion for various reasons, the incidence of fetal malformations and maternal toxicity and sometimes even the

death of mother and fetus have doubled the importance of the issue and cause anxiety in the mothers. This period can be changed into a favorable and memorable periods of life by presenting techniques such as doing especial practices and techniques. One of the most functional and best practices available is to learn and use yoga during pregnancy. The relationship between yoga and pregnancy can be considered from two aspects:

The effects of pregnancy on yoga exercises:

Many changes such as change in the secretion of hormones like thyroid, corticosteroids, estrogen and progesterone during pregnancy is created in the pregnant woman as well as new hormones like Relaxing. Relaxing and estrogen secretion causes softening of the ligaments and joints and is associated with more flexibility due to the result of yoga in pregnancy. On the other hand, the fatigue caused by the overweight and physical changes can affect the order and doing moves and the increase in the womb volume and magnitude of stomach changes the gravity point of the body and prevents the complete doing of some moves as a space-occupying factor. Moreover, fetus health in the womb forces to not to do some moves. Moves that cause direct pressure on the stomach and viscera or the moves that are associated with inhale lock up and increase heart burden and prevent blood circulation.

Therefore, doing asana in the pregnant period should be associated with complete immunity and should be implemented by some change and some moves are forbidden completely due to being dangerous. Although people who have worked yoga for many years may be able to do the moves such as Capricorn, it is better to prevent the moves that impose high pressure on the body and generally it is better to avoid them in the case of dangerous pregnancy.

The effects of yoga on pregnancy:

Maybe the pregnant woman has done yoga exercises long before her pregnancy, so it is easy to do yoga while pregnancy. But doing yoga exercises and trainings can be started during pregnancy and benefit them. In pregnancy preparation and easy delivery classes, beneficial guidance for the way of standing, sitting, lying, walking, lifting things and using leisure time to train muscles of pelvic floor and all the muscles of the body and the readiness for the easy delivery are taught. These trainings are the most valuable tips that every woman should follow to keep refresh and healthy.

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