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Araştırma Makalesi/ Research Article

THE EFFECT OF PREGNANCY YOGA ON SPIRITUAL WELL-BEING: A RANDOMISED CONTROLLED TRIAL

GEBELİK YOGASININ SPİRİTÜEL İYİ OLUŞU ÜZERİNE ETKİSİ: RANDOMİZE KONTROLLÜ ÇALIŞMA

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Abstract
Background: Previous studies showed the potential effects of pregnancy yoga on stress, anxiety, depressive symptoms, pregnancy disorders, and mental health in normal pregnancies.
Objective: This randomized controlled study aimed to determine the effect of pregnancy yoga on the spiritual well-being of pregnant women.
Method: 72 pregnant women who were at gestational weeks of 12-28 and who attended the pregnant training class of a university hospital between September 2019- December 2019 were randomized to yoga and control groups. In this study, the yoga group (n = 36) received standard care plus a total of 12 sessions of yoga practice for 6 weeks, two days a week and each session lasting 40 minutes. The control group (n = 36) received standard care during the same period. The Spiritual Well-Being Scale was applied to the pregnant women in the yoga group before and after the yoga practice.
Results: Before the yoga practice, the Spiritual Well-Being Scale total score of the pregnant women in the yoga group was 111.69 ± 11.79 and it increased to 121.56 ± 7.46 after the intervention. The difference between the post-intervention Spiritual Well-Being Scale total score of the yoga group and the control group was found to be statistically significant (p = 0.000).
Conclusion: Yoga during pregnancy may promote the spiritual well-being of pregnant women.
Keywords: Yoga, pregnancy, spiritual health, spiritual well-being, nursing

Özet
Arka fon: Önceki çalışmalar, gebelik yogasının normal gebeliklerde stres, kaygı, depresif belirtiler, gebelik bozuklukları ve ruh sağlığı üzerindeki olumlu etkilerini göstermiştir.
Amaç: Bu randomize kontrollü çalışmanın amacı gebelik yogasının gebelerin ruhsal iyi oluşları üzerindeki etkisini belirlemektir.
Yöntem: Eylül 2019- Aralık 2019 tarihleri arasında bir üniversite hastanesinin gebe eğitim sınıfına katılan 12-28 gebelik haftalarında olan 72 gebe randomize olarak yoga ve kontrol gruplarına ayrıldı. Bu çalışmada yoga grubuna (n=36) standart bakım yanında 6 hafta, haftada iki gün ve her seans 40 dakika olmak üzere toplam 12 seans yoga uygulaması yaptırıldı. Kontrol grubu (n=36) aynı dönemde standart bakım aldı. Yoga grubundaki gebelere yoga uygulaması öncesi ve sonrasında Spiritüel İyi Oluş Ölçeği uygulandı.
Bulgular: Yoga grubundaki gebelerin yoga uygulaması öncesi Spiritüel İyi Oluş Ölçeği toplam puanı 111.69±11.79 iken uygulama sonrasında 121.56±7.46'ya yükseldi. Yoga grubu ile kontrol grubunun uygulama sonrası Spiritüel İyi Oluş Ölçeği toplam puanı arasındaki fark istatistiksel olarak anlamlı bulunmuştur (p=0.000).
Sonuç: Gebelikte yoga, gebelerin ruhsal esenliğini artırabilir.
Anahtar Kelimeler: Yoga, gebelik, ruhsal sağlık, ruhsal iyilik, hemşirelik

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INTRODUCTION

Yoga is a mind-body practice that originated in India as an aspect of ancient Indian philosophy (1). It includes physical postures (asana), breathing exercises (pranayama), concentration and meditation (dharana and dhyana), and contemplation (2).

Women are exposed to many physiological, biological, psychological and social changes during pregnancy. The changes experienced during pregnancy may increase the physical and emotional needs of women, may make them vulnerable, and negatively affect their quality of life and life satisfaction (1).

It is stated that psychological problems such as depression and anxiety increase in pregnancy in relation to the increased cortisol level (3). It has been shown that yoga plays a role on the hypothalamic-pituitary-adrenal axis, which is associated with stress and cortisol levels (4).

Many studies have examined the effects of yoga during pregnancy; however, they have reached limited results. They have shown that yoga reduces depressive symptoms (5-9), stress and salivary cortisol levels (10), anxiety level (11,12), helps women to adopt more conscious and healthy behaviors (13), pain associated with pregnancy, α-amylase levels (14), increases birth self-efficacy (15), sleep quality of pregnant women (16), fear of delivery, postpartum maternal and fetal complications (17), and the preterm birth rate and delivery period (18) and the vaginal delivery rate; and promotes fetal development indicators. In addition, a limited number of studies have concluded that yoga is beneficial in improving subjective mood (19) and increasing well-being (20); however, spirituality has not been focused on in yoga research so far. Spiritual well-being has been found to be significantly associated with mental health problems such as anxiety and depression during pregnancy (21). Dunn and Shelton (21) found that high-risk pregnant women had the lowest level of spiritual well-being and the highest levels of anxiety and depression. Another study reported that increased spirituality in pregnant women was associated with less stress and more health promotion behaviors (22).

It is reported that yoga can be accepted as an evidence-based complementary therapy to improve both physical and psychological health in pregnancy (normal and high-risk), delivery, and postpartum period (23). In addition, the lack of risk of injury makes yoga a safe practice during pregnancy (24). Pregnant women may prefer non-pharmacological methods in their health problems, especially mental problems, because they do not want to use drugs for the solution of problems due to the concern that they may have negative effects on the fetus (25). Non-pharmacological methods such as mindfulness meditation, biofeedback, yoga, exercise, and expressive writing are used to increase mental well-being and reduce maternal stress (26). For this reason, yoga during pregnancy may be beneficial.

Although there are many studies in the literature investigating the effects of pregnancy yoga on pregnancy complaints, physiological changes in pregnancy and mental problems, no studies have yet examined the effect of pregnancy yoga on the spiritual well-being of pregnant women. To the best of our knowledge, this study is the first randomized controlled study in Turkey to investigate the effect of prenatal yoga on psychological well-being in healthy pregnant women.

METHOD

Design

The study was conducted in a pregnant training class at a university hospital in the Black Sea region of Turkey according to the CONSORT guideliness. The target population of the study consisted of all pregnant women who attended the pregnancy training class at a university hospital between September 2019 and December 2019.

Setting and Sample

The sample of the study consisted of 72 pregnant women who were at gestational weeks of 12-28 and who attended the pregnant training class and met the inclusion criteria. Randomized sampling was performed, and subjects were categorized into two groups as test and control, based on a simple-random approach, utilizing a table of random numbers (Fig. 1).

Participants

The software program G*Power 3 was used to conduct a power analysis to determine our sample size (27). In a sample article, an effect size of 0.35 was calculated in the power analysis using the mean and standard deviation scores on the effects of yoga on psychological health in the experimental and control groups (28). The power of the study was calculated as 90% with a total of 68 subjects, n=34 in each group. Considering the losses during data collection and statistical analysis, the study was conducted with a total of 82 pregnant women, n=41 for each group. Our study was completed with 72 women (36 experimental group and 36 control group).

Selection criteria

Inclusion criteria: Pregnant women at 12 weeks of gestation who had any of the following characteristics were considered to be eligible for the study:

(1) first time mothers attending pregnant training class

(2) does not currently practice yoga

(3) women who conceive spontaneously

Exclusion criteria:

(1) History of poor obstetric outcome in previous pregnancies

- ✓ Pregnancy-induced hypertension (PIH)
- ✓ Preeclampsia (PE)
- ✓ Eclampsia (E)
- ✓ Gestational diabetes mellitus (GDM)
- ✓ Premature rupture of membranes (PROM)
- ✓ Low birth weight (LBW)
- ✓ Small for gestational age (SGA)
- ✓ Large for gestational age (LGA)
- ✓ Intrauterine growth restriction (IUGR)
- ✓ Preterm birth

(2) In current pregnancy

- ✓ Pregnancy-induced hypertension (PIH)
- ✓ Preeclampsia (PE)
- ✓ Eclampsia (E)
- ✓ Gestational diabetes mellitus (GDM)
- ✓ Premature rupture of membranes (PROM)
- ✓ Low birth weight (LBW)
- ✓ Small for gestational age (SGA)
- ✓ Large for gestational age (LGA)
- ✓ Intrauterine growth restriction (IUGR)
- ✓ Preterm birth

(3) Twin pregnancies

(4) Extreme ages (maternal age below 20 or above 35)

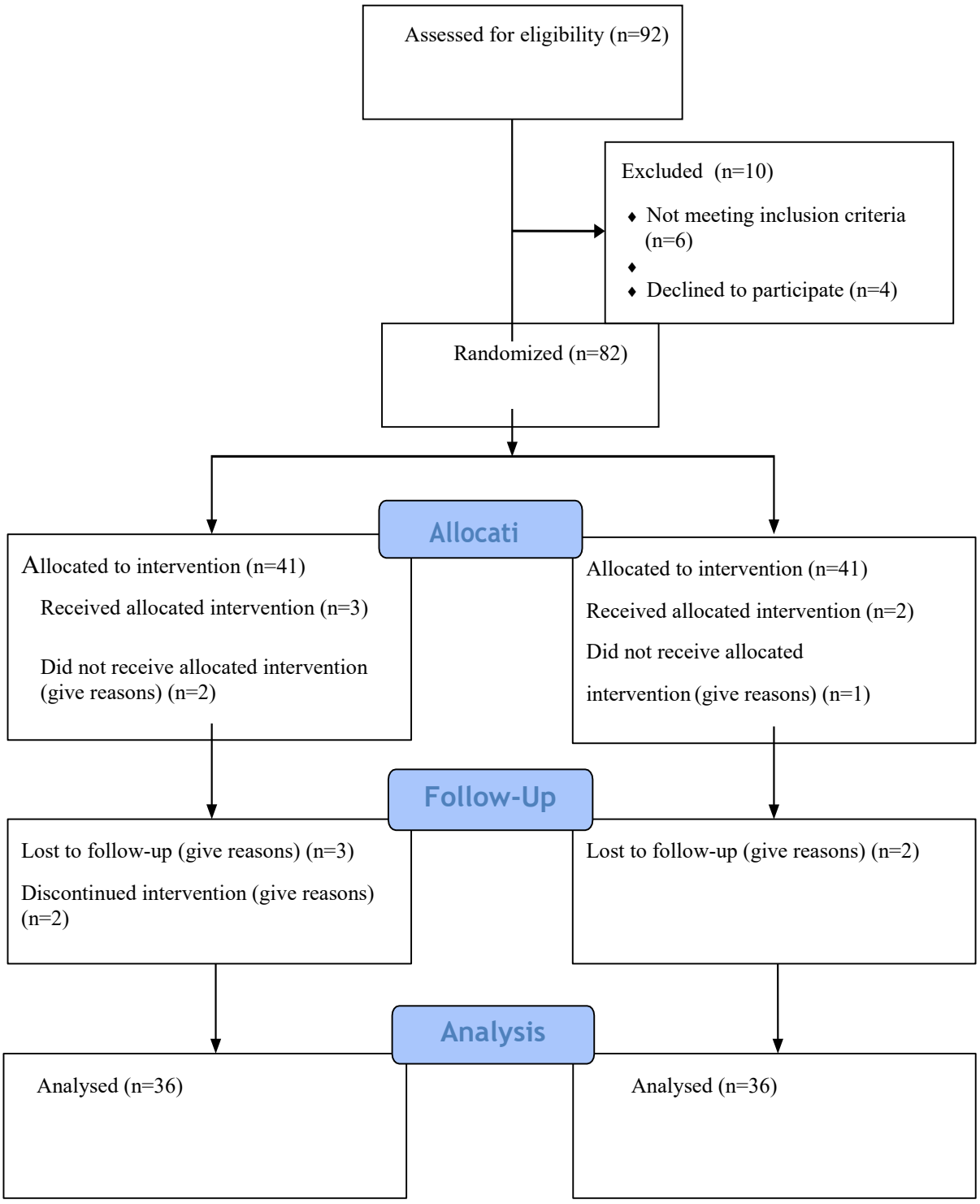
(5) Pregnant women with obesity (having a maternal body mass index above 30 at the time of participant recruitment).

Ethical Consideration

All the research procedures involving human participants were performed following the Helsinki Declaration. Ethical approval was obtained from Hitit University Non-Invasive Ethics Committee (no: 2019-165 date: 28/06/2019), institutional permission was received from the hospital where the study was conducted and written, and verbal informed consent was obtained from each participant. All participants signed an Informed Consent Form to agree that they participated in the study without any reimbursement. They were properly informed about the research aim and procedures

and were given the right to withdraw from the study at any time.

Figure 1. CONSORT flow diagram of study recruitment.



Instruments

The data were collected using the Pregnant Information Form and the Spiritual Well-Being Scale.

Pregnant Information Form: The form was developed by the researcher and includes a total of 31 questions to assess the sociodemographic characteristics of the participants such as age, education, profession, and income. The form was administered to the pregnant women in the control and yoga groups during the first interview.

***Spiritual Well-Being Scale*:** The scale was developed by Ekşi and Kardaş (2017) to assess the degree to which adults lead their lives in line with their values and their understanding of the personal, social, environmental and transcendental meanings. The scale includes 29 items, which are rated on a five-point Likert type scale. In the validity and reliability study of the Spiritual Well-Being Scale, Cronbach's Alpha was calculated as 0.89. Higher mean scores indicate a higher level of spiritual well-being (29).

Intervention

All pregnant women in the 12th week of gestation were approached by the researcher at the pregnant training class of the hospital. Those who were interested were directed to a private room, where the details of the study were shared in a written protocol. Those who volunteered to participate and met the inclusion criteria were requested to sign the informed consent form in order to complete the recruitment process.

Pregnant women who did not meet the inclusion criteria and did not agree to participate in the study and those who did not speak Turkish were excluded from the study.

The researcher completed the pregnancy yoga instructor training course. She attended 12 sessions of yoga for 6 weeks, two days a week, 40 minutes per session. In the study, the yoga practice was carried out by the researcher in 3 groups, with 12 people in each group on certain days of the week and at certain times in the pregnant training class. The pregnant women attended suitable yoga practices twice a week. No adverse situations were reported during the yoga sessions. No application was made to the pregnant women in the control group. They received the standard prenatal care. The Spiritual Well-being Scale was administered to both groups at the end of six weeks.

Standard prenatal care: Routine prenatal health care is to be followed at least 4 times during pregnancy by obstetricians and midwives in the obstetrics clinic, in line with the recommendations of the national antenatal care management guideline (17). During these follow-ups, pregnant women are informed about the prenatal period, preparation for birth and the skills needed during birth.

Yoga intervention steps: A 40-minute session of yoga practice includes five minutes of breath awareness study, twenty minutes of application of pregnancy asanas, and fifteen minutes of mother-infant communication and meditation.

Data Analysis

SPSS 21.0 (Statistical Package for Social science for Windows, Version 21.0) package program was used to analyze the data. The results were found to have a confidence interval of 95% and a significance level of $p<0.05$. Mean, standard deviation, median (minimum-maximum), number of units (n), and percentage (%) values were used to define the variables. Whether the data related to the quantitative variables showed normal distribution was evaluated with the Shapiro-Wilk normality test. The Chi-square analysis, independent samples t test and paired t test were performed to analyze the data showing normal distribution.

RESULTS

Table 1 shows the distribution of the socio-demographic characteristics of the pregnant women in the yoga and control groups. There was a statistically significant difference

only between the education levels of the spouses of the pregnant women in terms of sociodemographic characteristics. No statistically significant difference was found between the pregnant women in the control and yoga groups, such as age, education status, body mass index, employment status, income perception, place of residence, family type and marriage duration (Table 1).

Table 1: Comparison of the socio-demographic characteristics of the groups included in the study (N = 72)

Sociodemographic features	Yoga group		Control group		Test	
	n	%	n	%	t/ X^2	p
Age						
Between 18-23 years	6	16,7	6	16,7	0.884	0.643
Between 24-30 years	22	61,1	25	69,4		
Between 31-38 years	8	22,2	5	13,9		
Education Level						
Literate - primary school graduate	12	33,3	18	50,0	5.486	0.064
Secondary school graduate	9	25,0	12	33,3		
Higher education graduate	15	41,7	6	16,7		
Body Mass Index						
Normal weight	14	38,9	12	33.3	2.546	0.280
Over weight	14	38,9	20	55.6		
Obese	8	22,2	4	11.1		
Spouse's Education Level						
Literate - primary school graduate	6	16,7	20	55,6	11.824	**0.003**
Secondary school graduate	12	33,3	6	16,7		
Higher education graduate	18	50,0	10	27,8		
Working status						
Working	10	27,8	5	13,9	2.105	0.245
Not working	26	72,2	31	86,1		
Perception of income						
Good	10	27,8	18	50.0	3.740	0.053
Moderate	26	72,2	18	50.0		
Place of residence						
District	8	22.2	5	13.9	0.845	0.358
City center	28	77.8	31	86.1		
Family type						
Nuclear family	16	44.4	21	58.3	1.390	0.238
Extended family	20	55.6	15	41.7		
Duration of marriage						
1-10 years	27	75,0	24	66,7	0.605	0.437
11 years and above	9	25,0	12	33,3		

The comparison of the total scores of the groups on the Spiritual Well-being Scale before and after the intervention is presented in Table 2. The Spiritual Well-Being Scale total score of the pregnant women in the yoga group was calculated as 111.69±11.79 before the intervention and as 121.56±7.46 after the intervention. This difference was found to be statistically significant. The Spiritual Well-being Scale total score of the pregnant women in the control group was calculated as 112.53±11.13 before the intervention and as 108.00±11.63 after the intervention. The difference was found to be statistically significant. The difference between the total scores of the yoga and control groups after the

intervention was also statistically significant (t=5.884, p=0.000).

No significant difference was found between the yoga and control groups in terms of obstetric characteristics (pregnancy week, number of follow-ups, place of follow-ups, miscarriage, curettage, and birth fear).

Table 2: Comparison of the total Psychosocial Health Assessment Scale During Pregnancy scores of the groups included in the study before and after the application (N = 72)

Spiritual Well-Being Scale Total Score	**Groups**		***Statistical Test and p Value***
	Yoga group Mean ± SD	**Control group Mean ± SD**	
Pre-test	111.69 ± 11.79	112.53 ± 11.13	t= - 0.308[a] p=0.759
Post-test	121.56 ± 7.46	108.00 ± 11.63	t= 5.884[a] p=0.000
Statistical Test and p Value	p=0.000[b] t=-5.435	p=0.000[b] t=4.171	

DISCUSSION

This randomized control study investigated the effect of yoga practice on spiritual well-being in healthy pregnant women between 12th and 28th weeks of gestation. Pregnancy is a special period which is accompanied by physical and psychological needs and in which different physiological changes and stress are experienced. It is necessary to manage the various physical, emotional, mental changes and conditions such as pain during this period. In order to protect the well-being and quality of life of the pregnant woman, and to achieve the best maternal and fetal outcomes, methods such as self-soothing techniques, psychoeducation and relaxation are useful (30).

Spiritual well-being affects the general health of the pregnant woman, her mental health, her ability to manage labor, maternal and fetal complications, and even postpartum physical and mental health. Our study revealed that the spiritual well-being levels of the pregnant women who do yoga are higher than the pregnant women who do not practice yoga. No side effects were observed in any of the cases. A systematic review reported that yoga was positively related to the spiritual well-being level (31). A study conducted with yoga practitioners revealed significantly increased levels of awareness and spiritual well-being and lower depressive symptoms in yoga practitioners (32). It was emphasized that the six-week yoga program in the second and third trimesters of pregnancy increased the level of optimism, strength and well-being in pregnant women (33). A doctoral study conducted in Turkey reported that pregnant women who practice pregnancy yoga have a better level of psychosocial health than pregnant women who do not (28). A qualitative study concluded that yoga practice has physical and psychosocial benefits, including pain relief, improved breathing, reduced stress and anxiety, and strengthened self-esteem (34). Yoga can ensure increased spiritual well-being, spiritual growth and the development of an integrative worldview, leading to a more positive outlook on life, happiness, and reduced existential anxieties (31). For this reason, health professionals should encourage pregnant women to practice yoga in order to improve

mental, physical and spiritual health during pregnancy.

It is stated that yoga in the perinatal period is effective in improving both maternal and fetal mental health and well-being (20). One study revealed that integrated yoga in normal pregnancy increased well-being by reducing anxiety, depression, and pregnancy-related distressing complaints (7), which supports our findings. Other studies found that depression, anxiety, birth pain, back pain, and cesarean section rates were lower in the yoga group and yoga during pregnancy made a positive contribution to psychological well-being and improved immune function and intrauterine fetal growth (35). Another study revealed that an hour-long weekly Dru yoga session for 4 weeks and a 20-minute DVD yoga practice at home increased psychological well-being and reduced stress (36). In order to reduce the risk of complications in pregnancy and achieve the best pregnancy and childbirth outcomes, necessary support, tools, and resources should be provided and appropriate physical activities should be performed (24).

By its very nature, yoga is related to increasing self-efficacy and decreasing emotional responsiveness. It should be noted that regular practice is essential to enjoy the spiritual benefits of yoga practice (31) and that the effect of yoga on the subjective well-being of practitioners depends on the degree of participation in the practice (32).

The number of studies investigating the effects of yoga on spiritual well-being is quite limited. Pregnancy yoga is known to have positive effects on physiological and psychological health. Yoga can especially facilitate spiritual well-being. Thus, it is particularly important to manage mental and physical health problems. The biggest limitation of the study is that it was conducted with women with a high level of education and living in the city center.

CONCLUSION

Yoga is a safe practice that can increase spiritual well-being in pregnancy. However, due to the limited number of studies, the effect of yoga on spiritual well-being during pregnancy needs to be investigated in higher quality, large randomized controlled studies in different cultures. It is thought that yoga practice should be included in nursing interventions and the spiritual well-being of pregnant women should be evaluated by nurses and midwives working in women's health clinics. It is recommended to carry out studies on larger samples and including risky pregnant groups.

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Conflict of Interest

The authors have no conflicts of interest to report.

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