Research Article

Impact of Attending Prenatal Yoga Classes on Prepartum Maternal Mental Health : A Quasi-Experimental Study

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Abstract

Objective: To analyze the impact of attending Prenatal Yoga Classes on Prepartum Maternal Mental Health.

Methods: The research design was a quasi-experiment of two groups with pre-test and post-test design. The sample was pregnant women who met the inclusion and exclusion criteria. A total of 106 participants were divided into two groups: intervention, and control group. The research instrument was Mental health questionnaire based on the World Health Organization-5 Well Being Index (WHO-5). The ANOVA test was used to analyze the data.

Results: The average mental health score of the intervention group was higher (84.04) than that of the control group (67.32), with a p-value <0.001.

Conclusions: This study concludes that Attending Prenatal Yoga Classes on Prepartum can improve maternal mental health. This research suggest that prenatal yoga can be alternative for physical pregnancy to improve mental health and have positive impact on labor process.

Keywords: mental health, pregnant women; yoga prenatal class.

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INTRODUCTION

Pregnancy is both an exciting and scary event for women leading to psychological changes that can develop into depression and anxiety[1]. The incidence of antenatal and postpartum depression reached 43%[2]. Maternal perinatal mental health have a significant impact on the health of the baby, impacting their physical and mental disorders in the future and brain development in the newborn.[3] The presence of sympathetic nerve stimulation increases the secretion of the hormone catecholamine, which increases cases of premature birth, complications of childbirth, anxiety symptoms during pregnancy were related to intrauterine growth restriction (IUGR) of the child[4], and prolonged labor, leading to cesarean section. Anxiety is commonly caused by pain during labor and scared of labor process. This condition was associated with prolonged labor, triggering severe pain that increased the section cesarean rate and postpartum depression.[5] Complementary antenatal classes, including Yoga can be utilized to reduce anxiety and scared of childbirth.[6,7] An increase in heart rate, blood pressure and increased secretion of cathecolamin and cortisol hormones accompanies stress and fear of childbirth.[8]

Physical exercise during pregnancy is one way to reduce childbirth complications such as insomnia, stress, overweight, back pain, constipation, hypertension, diabetes in pregnancy, and anxiety during pregnancy. In addition, physical activity also increases the individual's ability to adapt to the baby.[9] Several physical activities are considered complementary therapy

such as yoga, gymnastics, pilates and, kegel exercise. One everyday physical activity pregnant women practice is Yoga.[6] Previous studies stated that yoga exercise increases pregnancy outcomes and reduces the impact of high-risk pregnancy.[10] Yoga is a combination of physical activity and psychological relaxation. Yoga improves muscle strength, memory, and sleep quality and lowers pain and stress.[11] Yoga is considered an optimal form of exercise during pregnancy, offering numerous physical and psychological health benefits for expectant mothers. During pregnancy, yoga allows communication of the mind, body, soul, and fetus[12]. Prenatal Yoga decreases anxiety, depression, back pain and pelvic pain, affecting a term childbirth and maintaining infant weight in normal conditions. Yoga is usually a combination of mental exercises, meditation, breathing exercises, stretching, and relaxation. Meditation is a specific practice for the body, soul, and mind [13,14] Another research project reported there was the influence of pregnancy yoga exercise on the level of anxiety in pregnant women in trimester III. There was the difference in the level of anxiety in pregnant women with the age of pregnancy more than 32 weeks in the pre and post yoga exercise[15]. Attending antenatal classes gives pregnant mothers the opportunity to meet with other mothers who have experiences in childbirth, to think and focus on personal needs and goals, to be less afraid and more confident, and to learn how to adapt to the stages of childbirth [2].

Recently implementation of prenatal yoga class in Riau Province Indonesia has popular in community. Many Hospital and clinics have actived prenatal yoga class program for pregnant women. Most previous studies have discussed the level of anxiety of pregnant women but have not been followed up until aterm pregnancy who attended routine antenatal and yoga class, another control group without prenatal yoga. Furthermore The purpose of this study was to analyze the impact of attending Prenatal Yoga Classes on Prepartum Maternal Mental Health.

METHODS

This study was a quasi-experiment with pre-test and post-test design. The study was conducted in Bakti Clinic and four community health centres (called as *Puskesmas*) in Riau Province, Indonesia. The Community health were *Puskesmas* Rumbai Timur, Payung Sekaki, Kuala Cenamu, and Pulau Kijang. The study was started after obtaining approval from the Research Ethics Committee of Abdurrab University, under approval number 313/KEP-UNIVRAB/VII/2024. All participants first filled out the informed consent, before becoming a sample of this study. Their Addresses and phone numbers were taken for follow-up of pregnancy development until postpartum period. Pregnant women in the intervention group were assisted by professional facilitators/midwives who had obtained prenatal yoga certificates. In this study, the intervention group participated in prenatal yoga accompanied by brief education about pregnancy, childbirth and postpartum.

Technique sampling using consecutive sampling, the sample consisted of 106 pregnant women divided into an intervention group and control group (53 pregnant women in each group). The intervention group consisted of pregnant women who participated in prenatal classes, while the control group comprised those who did not attend the classes. The inclusion criteria for both the intervention and control groups were as follows: women in their third trimester of pregnancy, no chronic illnesses, no history of mental disorders within the past year, no consumption of psychotropic substances, non-smokers, no alcohol consumption, no childbirth complications such as preeclampsia, bleeding, IUFD, or premature labor, having communication abilities, and willing to participate as respondents. The exclusion criteria for the intervention group was missing prenatal classes for more than three weeks.

The intervention group (prenatal yoga class) received antenatal care, education, addition 1 hour of yoga class, once a week starting from the third trimester until 37 weeks of pregnancy (minimum 7-10 sessions) in a yoga studio. The control group received routine antenatal care without attending yoga classes, pregnant women were free to practice independently. Before the prenatal yoga class began, they first filled out a mental health questionnaire for a pre-test. Then continued with the prenatal yoga class. The stages of yoga are breathing exercises, yoga (physical movements such as triangle exercises, angled exercises, archery position, pelvic rotation in a standing position, joyful jumps, rotation and release, pelvic floor stretches, strengthening the pelvic floor muscles, gentle perineal traction, upward pelvic rotation, pink panther steps, hip release, knee rotation, active traction in the kneeling position, knee movements, hip and knee cycles, and knee sitting), meditation and

Self Hypnotist and self awareness. Furthermore, filling out the questionnaire for the mental health follow-up was carried out after 4 weeks of the prenatal yoga class, and the mental health post-test was carried out at the last of the 37th week of pregnancy.

MEASUREMENT

The data collection tool was a questionnaire consisted of three parts. The questionnaire consisted of several questions related to obstetric information, including age, gestation week, education level, occupation, this completed when the mother has agreed to become participant.

Mental health questionnaire based on the World Health Organization-5 Well Being Index (WHO-5). The mental health questionnaire consisted of five positive statements about the feelings of participants intervention and control group in 3 times measurements pretest, follow up and posttest. The five statements used in the assessment were: "I feel cheerful and enthusiastic," "I feel happy and relaxed," "I am active and energetic," "I wake up feeling fresh and open-minded," and "My daily life is filled with things that interest me." Each item was rated on a 0-5 scale, with 0 indicating a lack of positive feelings and 5 indicating strong positive emotions. The scale ranged from 0 (never) to 5 (always), where 0 = never, 1 = very rarely, 2 = rarely, 3 = sometimes, 4 = often, and 5 = all the time. The scores were transformed into a range of 0 to 100, with a score of ≤ 50 indicating emotional instability. Mental health well-being was measured during four weeks: pre-test, follow-up, and post-test

STATISTICAL ANALYSIS

Data were analyzed using SPSS 22, descriptive statistics including frequency, relative frequency, mean, and standard deviation were used to describe the samples. The Kolmogorov–Smirnov test was used to evaluate the normality of the variables. ANOVA tests for mental health,

RESULTS

The participant' characteristic in Table 1 indicates that the age average and standard deviation of the participant in the intervention group and the control group were 27.55 ±3.98 and 29.09 ± 5.70, respectively. The majority of education level was from elementary school counted 73.6% for the intervention group, and 83% for the control group. In addition, most of the participants were not employed (84.9 % for the intervention group, 92.5% for the control group) and were multigravida (66% for the intervention group and 47% for the control group).

The average and standard deviation pre-test mental health scores for the intervention and control groups were 74.26±9.33 and 68.30±9.53, respectively. The average scores for the second measurement were 76.00±9.79 and 67.55±9.83, while the third measurement yielded average scores 84.04±11.53 for the intervention group and 67.32±7.71 for the control group (Table 2). The intervention group demonstrated significantly higher scores than the control group, with a p-value of less than 0.01

Table 1. Characteristics of Pregnant Women in the Intervention and Control Groups

Variables	Intervention group (participated in prenatal class)	Control group (not participated in perinatal class)
Education	**N (%)**	**N (%)**
Elementary	39 (73.6)	44 (83)
University	14 (26.4)	9 (17)
Occupation		
Employed	8 (15.1)	4 (7.5)
Unemployed	45 (84.9)	49 (92.5)
Parity		
Primigravida	18 (34)	6 (11.3)
Multigravida	35 (66)	47 (88.7)
Age	27.55 (3.98)	29.9 (5.70)

Table 2. The distribution of the mean scores of maternal mental well-being in the intervention and control groups

Variables	Group	Pre-test		Follow up		Post Test		Group Effect	Time Effect
		M	SE	M	SE	M	SE	F/P	F/P
Mental Health Score	Intervention group	74.26	1.28	76	1.34	84.04	1.58	1.736	9.77
	Control group	68.30	1.31	67.55	1.02	67.32	1.25	0.755	0.981

Mauchly's = 0.852; P <0.01

DISCUSSION

Study in the control group revealed that despite the decreasing of mental well-being of pregnant women in the second measurement until before childbirth, this opposite with attending prenatal yoga class affected significant difference in positive mental health during and until aterm pregnancy period, in addition pregnant women more confident to preparation childbirth. In the intervention group, participants received pregnancy education, including antenatal care, childbirth preparation, postpartum care, and newborn care. Furthermore, the participants were divided into several groups and performed yoga and prenatal exercise under the Yoga facilitator's guidance. On the other hand, the control group was encouraged to independently learning through books and other accessible media.

Based on other study prenatal education affected developing positive behavior of pregnant mothers toward healthcare providers as well as increasing mother self-confidence [16,17]. Antenatal education is integral to positive pregnancy outcomes, improve women's ability to take control of their pregnancy by undertaking self management at home[18]. Physical activity need family support[19], A recent study implementing interventions aimed to boost maternal well-being through stress management education, effectively reduced anxiety and improved overall mental well-being [20]. Another study conducted among infertile women demonstrated that relaxation techniques and breath training enhanced the well-being by reducing anxiety and decreasing sympathetic system activities [21].

This study contradicts previous research, which suggested that telephone counseling conducted by midwives to pregnant women between 24– 34 weeks did not affect postpartum depression [22]. Prenatal classes were more effective in improving mental health compared to only telephone counselling. Providing training for pregnant women has been shown to significantly stabilize mental well-being, which in turn promotes improved postpartum mental health. Another benefit of prenatal classes is that they provide an opportunity for pregnant to have direct interaction and peer support, leading to enhanced psychological and mental well-being. This study supported previous findings mentioned that Yoga not only improved the psychological well-being but also enhanced childbirth preparedness of pregnant women [23].

Complementary based prenatal class, including prenatal yoga classes provide guidance on stretching training, relaxation training, and breathing technique training [24]. This class is deemed to improve positive behavior on the normal delivery [25]. A study revealed that childbirth education and yoga prenatal training enhanced their physical preparedness and breathing control during the delivery process [26].

Despite the lack of comprehensive explanation regarding yoga mechanism, the benefits of yoga on the muscular and nervous are sufficiently evident. Yoga strengthens and improves the flexibility of the muscles involved in the childbirth process, especially back muscles and pelvic floor muscles [27]. Yoga training affects on endocrine system and the autonomy nervous system of pregnant women, contributing to hormone secretion and reducing stress [28,29] Furthermore, relaxation technique involving breathing training during Yoga enables pregnant women to maintain a calm and relaxed state during childbirth, thereby increasing the oxygen supply for expectant babies [30]. To conclude, prenatal Yoga is significant for building strength, enhancing muscle flexibility, boosting energy, to eventually promoting relaxation of mind and body. Previous study indicates that Yoga improves maternal and child health, decreases pain levels during childbirth, and decrease other discomfort related to pregnancy [31,32].

Yoga was also effective for mothers with high risk pregnancy. Beside that Yoga alleviates pregnancy complications related to hypertension

[5,33]. Yoga has an essential role in decreasing blood glucose levels, which may provide significant benefits for both diabetes-pregnant mother and their infants [34]. Yoga is not considered dangerous for infant. A physical activity guidance states that prenatal Yoga improves the physical and mental health of pregnant mothers, decreases pregnancy complications, and increases childbirth outcomes [35]. Thus, promoting prenatal class and physical activities is essential for enhancing both emotional and physical well-being.

CONCLUSION

Attending Prenatal Yoga Classes on Prepartum can improve maternal mental health. This research suggest that prenatal yoga can be differentiator of physical activity during pregnancy that can improve mental health and have positive impact on labor process, therefore healthcare providers can incorporate yoga into antenatal classes to promote relaxation, improve maternal mental health and reduce anxiety.

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