



## Is Prenatal Exercise with Prayer Movement Affecting Anxiety Level and Blood Pressure in Third Trimester?

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### Article Info

#### Article History:

Submitted October 2020

Accepted December 2021

Published January 2022

#### Keywords:

Anxiety, Blood Pressure, Pregnancy, Prenatal Exercise with Prayer Movement

#### DOI

<https://doi.org/10.15294/kemas.v17i3.26552>

kemas.v17i3.26552

### Abstract

Pregnancy is an important experience in a woman's life. However, these can cause anxiety. Midwives as a companion must be able to reduce it. In addition, the normality of blood pressure is also influential on the welfare of pregnant and fetuses. One way applied to decrease anxiety and normalize blood pressure is through prenatal exercises. This study aims to determine the prenatal exercise effectiveness with Muslim prayer movement on anxiety and blood pressure in the third trimester in the Independent Practice of Midwives in Karangroto Semarang. This type of research is Quasi-Experiment research with a non-equivalent control group design. Respondents numbered 40 people divided into intervention and control groups. This research took time at the Independent Midwife Practices in October–November 2019. The results showed an effect of the pregnancy exercise movement of prayer on the anxiety and blood pressure of third-trimester pregnant women ( $p < 0.05$ ). This research concludes the effectiveness of prenatal exercise with Muslim prayer movement on anxiety level and blood pressure in the third trimester.

### Introduction

Physical changes in pregnant women, like changes in body shape (with an increasingly large body), the pimples appearance, or peeling of facial skin. Psychological changes occurred due to anxiety before birth, changes in concentration in relationships with partners, and anxiety about financial problems. At the same time, she will also feel anxious at the birth of the baby and the beginning of a new phase in the life of the mother-to-be (Shohani et al., 2018).

In Quran, there are many verses related to the dynamics of the human psyche that theoretically can be used as a basis for psychotherapy to overcome anxiety. Al-Quran offers a solution for an anxious soul to find peace, both through reading and writing from the al-Qur'an text. Many verses of the Quran also contain guidance on how to deal with

life's problems without feeling anxious (Zaini, 2015). Anxiety is a psychological disorder that many people experience. In Arabic, it says when something is anxious, it will move in its place. So, the form of anxiety is a change that is contrary to what Allah describes in His Word (Zaini, 2015).

The anxiety experienced by pregnant women is caused by an increase in the progesterone hormone. In addition to making pregnant women feel anxious, this increase in hormones also causes emotional disturbances and makes pregnant women tired quickly. The hormone that increases during pregnancy is the adrenaline hormone. The adrenaline hormone can cause dysregulation of the body's biochemistry. It results in physical tension in pregnant women, such as irritability, anxiety, inability to concentrate, doubt, and maybe even wanting to escape the realities of life (Kheirkhah

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et al., 2014, (Schetter and Tanner, 2015). Pregnant women will experience psychological changes. Namely emotional changes, tendency to be lazy, sensitive, easily jealous, ask for more attention, feel uncomfortable, depression, stress, and anxiety. Anxiety in pregnant women can be due to the long period of waiting for birth, full of uncertainty, and also images of scary things during the delivery process. This fear is often felt in the first pregnancy or primigravidas, especially in the face of childbirth. The psychological burden on a pregnant woman is more common in the third trimester of pregnancy than in the first and second trimesters (Astuti and Hadisaputro, 2019). In a state of heavy psychological burden experienced by pregnant women, it can often affect the life of the intrauterine fetus and the abnormalities that arise depending on the time of occurrence of the psychological burden. If the disturbance begins to appear in early pregnancy, it can affect intra-uterine fetal growth, causing stunted fetal growth or Intra Uterine Growth Restriction (IUGR), to disruption of the fetal heart rate when the pregnancy is close to giving birth (Ibanez et al., 2015).

The existence of anxiety, also related to the condition of blood pressure. High anxiety is closely related to hypertension. Hypertension in pregnancy ranks second after bleeding, as the biggest contributor to MMR (Maternal Mortality Rate) in Indonesia. However, there was a change in the proportion until 2013. Where bleeding and infection decreased, while hypertension in pregnancy had increased. More than 25% of the causes of AKI in 2013 were hypertension in pregnancy (Ministry of Health, 2013). Hypertension in pregnancy, including pregnancy complications more than 10% worldwide. Hypertension is one of the leading causes of maternal and child morbidity and mortality worldwide. 1 in 10 of all deaths in Asian and African states are associated with hypertension in pregnancy. One-fourth of maternal mortality in Latin American states is related to complications from hypertension in pregnancy (Zaini, 2015, Schetter and Tanner, 2015, (Loomba et al., 2012).

One of the non-pharmacological treatments for anxiety and hypertension is physical exercise. One of the physical exercises that

are safe for pregnant women to do, according to The American College of Obstetrics and Gynecologists is modified pregnancy exercise for pregnant women (American College Obstetricians and Gynecologists (American College Obstetricians and Gynecologists, 2013). Low-intensity workouts such as pregnancy exercise provide beneficial physiological effects for pregnant women. Pregnancy exercise has positive effects on reducing depression in pregnant women. Pregnant exercise during pregnancy can significantly improve lower pain, feelings of discomfort and stress, and can improve the quality of life (Astuti and Hadisaputro, 2019, Berghella and Saccone, 2017).

Exercises recommended for pregnant women help maintain the body health and the fetus to develop properly and keep the mother's emotions stable are walking, cycling, swimming, pregnancy exercise, hypnobirthing, and yoga (Hinman et al., 2015). Prenatal exercise is a therapy in the form of activities or movements given to pregnant women to prepare themselves, both physical and psychological, to keep the mother and baby healthy. For primigravida and multigravida pregnant women, it is highly recommended to follow a pregnancy exercise program for the health of the mother and fetus (Curtis, Weinrib and Katz, 2012; Shohani et al., 2018).

Pregnancy exercise helps the mother to connect with the baby and her own body through deep practice and build awareness during the birth or delivery process. Physiologically, this yoga exercise will reverse the effects of the stress involving the parasympathetic part of the central nervous system. Pregnancy exercise will inhibit the increase in sympathetic nerves so that the hormone that causes body dysregulation can decrease. The parasympathetic nervous system has the opposite function of the sympathetic nerve. It will slow down or weaken the internal organs' work of the body. As a result, there is a decrease in heart rate, breathing rhythm, blood pressure, muscle tension, metabolic rate, and the production of stress-causing hormones. As the levels of stress-causing hormones decrease, the whole body begins to function at a healthier level with more energy for healing, restoration, and rejuvenation. Thus, pregnant

women will feel relaxed along with decreased anxiety symptoms (Curtis, Weinrib and Katz, 2012; Astuti and Hadisaputro, 2019). Based on the research results on the effectiveness of pregnancy exercise in reducing the anxiety of pregnant women in the third trimester, there is an anxiety reduction on the first day and the third day before and after being given pregnancy exercise.

Prayer is an obligation for every Muslim who has fulfilled the mandatory requirements to perform prayer. . Many benefits are obtained in every prayer movement when viewed from the health aspect of prayer, which can have a therapeutic effect on humans. By performing the prayer movements perfectly and correctly, the body organs will be healthy because they have a calming effect on the soul or relaxation, so blood circulation becomes smooth, and the muscles in the body relax. Pregnant women feel it with their beloved children because they can have a therapeutic effect when done properly, solemnly, and intend to worship and get closer to Allah SWT. Drastic changes in pregnant women often cause discomfort and even become a problem. These problems can be physical or psychological disorders. One of the alternatives to prevent this disorder is to do special exercises for pregnant women to prepare the mother for childbirth, reduce light stress during the Christmas season (Schetter and Tanner, 2015).

One of the complementary therapies introduced to control hypertension is prayer movement therapy. Movement in prayer therapy will activate various joints in the body. In addition, it produces a better effect than classical music therapy sessions. Because basically, the majority of the Muslim population is more comfortable with prayer movement interventions than listening to classical music they rarely do. The prayer movement is a complex activity, consists of mental, verbal, and physical activity. When these elements unity, even though the energy used in prayer is not optimal, the results and benefits generated can be higher than the other activity. Therefore the implementation of prayers must be carried out with all your heart and mind, verbally say prayers solemnly as the body carries out the movements in prayer (Doufesh et al.,

2014). Several studies have stated that the prayer movements include standing, bowing, prostration, and sitting, are the same as exercise or gymnastics with a therapeutic effect and can improve blood circulation to the fetus, especially prayer movements performed five times a day. Therefore prayer movements can make pregnant women healthy and fit and not expensive to pay for professional instructor services.

## Method

This research is a Quasi Experiment with a non-equivalent control group design. The subjects of this study were all 3-trimester pregnant women at the Karangroto Region Midwife Independent Practice, totaling 40 respondents who had adjusted to the inclusion and exclusion criteria, were willing to take part in the study by signing the consent form after explanation. With the inclusion criteria: pregnant women in the third trimester did not experience any problems or complications, the pregnancy was wanted and/or planned, and the exclusion criteria for mothers were blind and/or deaf. The research subjects were divided into two, namely, the intervention group and the control group. In the intervention group, the intervention given was in the form of pregnancy exercise care, prayer movements, while the control group received conventional pregnancy exercise care.

To measure the anxiety is by the Zung Self-Rating Anxiety Scale and measuring blood pressure using a blood pressure check (sphygmomanometer). The statistical test used in this study used a frequency distribution and chi-square test or Fisher exact test. If the p-value  $<0.05$ , then  $H_0$  is rejected or  $H_1$  is accepted. While if the p-value is  $> 0.05$ , then  $H_0$  is accepted or  $H_1$  is rejected. This study seeks to uphold scientific and ethical attitudes in research. Researchers try to minimize losses that may arise and maximize research. This research took place on the Midwives Independent Practice in the Karangroto area and took time in October-November 2019.

## Results and Discussion

The distribution of characteristics of pregnant women by age, education and

occupation can be seen in the following table:

Table 1. Characteristics of Pregnant Women Based on Age, Education and Occupation

No	Characteristics	Groups		p-value
		Intervention (n=20)	Control (n=20)	
1	<b>Age (year)</b>			<b>0,916*</b>
	<20	4 (20%)	3 (15%)	
	20-35	15 (75%)	16 (80%)	
	>35	1 (5%)	1 (5%)	
2	<b>Education</b>			<b>0,736*</b>
	High School (Junior or Senior)	13 (65%)	14 (70%)	
	Graduate (College or University)	7 (35%)	6 (30%)	
3	<b>Profession</b>			<b>0,913*</b>
	Housewife	5 (25%)	5 (25%)	
	Employee	7 (35%)	6 (30%)	
	Entrepreneur	5 (25%)	6 (30%)	
	Medic / paramedic	1 (5%)	1 (5%)	
	Government employee / Army / Police	2 (10%)	1 (5%)	
	Lecturer / Teacher	0 (0%)	1 (5%)	

\*Mann Whitney Test

Source : Primari Data, 2019

Based on table 1, the results show that the analysis of the difference-test for the characteristics of age, education, and occupation in the two research groups did not show any significant differences ( $p > 0.05$ ) so

the data was worthy of comparison.

The results of the analysis of the blood pressure difference-test before intervention can be seen in the following table:

Table 2. Results of Blood Pressure and Anxiety Measurements Before Intervention

Variables	Before				p*	After				p*
	Control		Intervention			Control		Intervention		
	n	%	n	%		n	%	n	%	
<b>Blood Pressure</b>					0,697*					0,038**
Low Blood Pressure	5	25%	3	15%		0	0%	0	0%	
Normal	8	40%	10	50%		11	55%	17	85%	
High Blood Pressure	7	35%	7	35%		9	45%	3	15%	
<b>Anxiety</b>					0,465*					0,007**
Moderate	16	80%	15	75%		14	70%	5	25%	
Mild	3	15%	5	25%		5	25%	7	35%	
None	1	5%	0	0%		1	5%	8	40%	

\*Mann Whitney Test

\*\*Two proportions test (one tail)

Source : Primari Data, 2019

Based on table 2, the results show that the analysis of blood pressure difference tests before the intervention in the two study groups did not show any significant difference ( $p > 0.05$ ), so the data was declared homogeneous. The results show that the analysis of the anxiety difference test before intervention in two research groups did not show any significant

difference ( $p > 0.05$ ), so the data was declared homogeneous. Based on table 2, the statistical test results also show that there is an effect of prayer movement on blood pressure ( $p < 0.05$ ). And the statistical test results show that there is an effect of prayer movement on pregnant women's anxiety ( $p < 0.05$ ). The characteristics of the research subjects used in this study

include age, education, and occupation.

Table 1 presents the characteristics of the research subject. Overall, the respondents' characteristics studied were not significantly different. So the two groups were considered homogeneous. Then, able to be compared. Based on the maternal age of the 40 respondents aged 20-35 years, 15 were pregnant women in the intervention group, 16 were pregnant women in the control group, which indicates that more than half of the respondents from each group were at the age of 20. -35 years old. It shows the reality of the population pyramid of Indonesia, with the majority of the population at a young age with a high pregnancy rate. Age <20 years is seven respondents consisted of four in the intervention group and three in the control group, and aged > 35 years two respondents consisted of one person in the intervention group and one person in the control group. Age is an indicator of personal maturation, organic, psychological, and intellectual functions that vary during the life cycle of human development. In the context of health behavior, chronological age and a person's ability to manage oneself in an environment involves various understandings, exemplary, and assessment. So it is hoped that with the increasing age, the environmental assessment will be more mature.

Based on education, of the 40 respondents, 13 were pregnant women in the intervention group when 14 were pregnant women in the control group who underwent final education in secondary school, and 13 pregnant women with high education, divided into seven in the intervention group and six in the control group. The higher the level of education and skills of Indonesian women, the more their knowledge will increase and open employment opportunities for women in various fields. The education level is also affected by the self-motivation factor. Someone who desires to learn and knows the benefits of education will immediately have self-motivation to improve education. Education for everyone has different meanings. Education is generally useful in changing thought, behavior, and decision-making patterns. A sufficient level of education will make it easier to identify stressors within themselves and from outside themselves. The education level also affects awareness and

understanding of the stimulus. One's education level is influential in responding to something that comes both from within and outside. People with higher education will give a more rational response than those with less education or are uneducated. It is per the opinion stating that the level of education also determines whether or not a person absorbs or accepts and uses his knowledge.

Based on the job, 40 respondents worked as laborers/employees, seven of them were in the intervention group, and six were in the control group. In addition, five people worked as entrepreneurs in the intervention group and 6 people in the control group. The results showed that pregnant women with high economic levels have stable emotions. A higher level of the economy can make it easier to obtain more information about health and disease. Increased anxiety is associated with less information obtained by mothers, so a higher economic level can reduce anxiety and make mothers more comfortable. A person's job is closely related to his economic levels. The more mothers have a good job, the better their economic level will be.

Blood pressure is the pressure exerted on the artery walls. The peak pressure occurs when the ventricles contract and is called systolic pressure. Diastolic pressure is the lowest pressure when the ventricles rest and fill their space. Each person's blood pressure varies widely. Infants and children usually have lower blood pressure than adults. Blood pressure is also affected by physical activity, where blood pressure will be higher when a person is doing an activity and lower when he is resting. To identify the causes of differences in the results obtained by previous researchers stating that the decrease or increase in diastolic blood pressure was affected by the length of time resting before taking blood pressure measurements after exercise, the magnitude of the increase in maximum oxygen use, and the length (in weeks) of exercise performed. In connection with this, an increase in diastolic blood pressure in this study was probably due to the short study time that took three weeks while the previous was four weeks. So it takes a longer time (Lomba et al., 2012; Triastuti and Dewi, 2018).

In table 2, the results show that three pregnant women in the intervention group experienced hypotension, seven with hypertension and ten had normal blood pressure. While in the control group, five respondents had hypotension, seven with hypertension and, eight had normal blood pressure. Pregnancy is a condition that is prone to all kinds of “stress”, which results in changes in physiological and metabolic functions. Pregnancy is a physiological event that causes a stress response. Healthy levels of stress (eustress) and hormonal effects are generally beneficial for both mother and baby at delivery. However, anxiety and excessive stress (distress) will cause a hormonal imbalance. Anxiety in pregnancy can cause a stress response, catecholamine increase, and cortisol hormones. They lead to increased respiratory rate, heart rate, reduced energy, and fatigue. Stress increases the secretion of the hormone cortisol in the human body in response to various stress (Thoma et al., 2013). In table 2 in the intervention group, 15 respondents experienced moderate anxiety. Five had mild anxiety. There were no pregnant women who did not feel anxious. Meanwhile, in the control group, 16 pregnant women experienced moderate anxiety, three people with mild anxiety, and only one who did not feel anxious.

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Drastic changes in pregnant women often cause discomfort and can become a problem. These problems can be physical or psychological disorders. One of the alternatives to prevent this disorder is to do special exercises

for pregnant women to prepare the mother for childbirth, reduce light stress during the Christmas season. Several studies have stated that the prayer movements include standing, bowing, prostration and sitting, are the same as exercise or gymnastics. They have a therapeutic effect and can improve blood circulation to the fetus, especially prayer movements performed five times a day. Therefore prayer movements can make women pregnant healthy, fit, and not expensive to pay for professional instructor services. Some of the discomforts often experienced by pregnant women in their third trimester include enlargement of the stomach and uterus, upper left abdominal pain (heartburn), constipation, lower abdominal pain due to fetal pressure, low back pain, swollen legs, etc. In the third trimester, the fetus' growth accelerates, so the organs around the stomach become stressed by the uterus and fetus. Meanwhile, the ever-increasing size of the uterus can also affect the position of the fetus that is not quite right, making it difficult for the mother to sleep and quickly experiences fatigue due to carrying the weight of the fetus she is carrying.

The prayer movement is one part of the implementation of the ergonomic exercise. It is a method applied to activate body parts to function optimally and stimulate hormones in the body, such as endorphins or others. When the endorphin hormone is released, it will provide a positive response, especially to fight the effects of the aging process experienced by the elderly. In practice, the prayer movement is carried out in a slow rhythm. It is per the age of the elderly (Habibi and Hasbi, 2015). The prayer movement intervention used in this study is part of non-pharmacological therapy in nursing practice. The use of complementary therapies is to optimize the pharmacological treatments given to patients, in this case, the elderly. In the elderly, the administration of pharmacological treatment is kept to a minimum. It is because the ability of the kidneys and other organs in the elderly has decreased, so they can't properly digest and absorb each drug given. The inability of the body organs to absorb the medicine consumed will cause the accumulation of some substances in the kidneys (Habibi and Hasbi, 2015).

Takbiratul Ihram with your hands together has tremendous benefits, especially for pregnant women and their fetuses. When Takbiratul Ihram utters the sentence of tauhid "Allahu akbar". The Takbir speech can provide good stimulation for the fetus because it includes positive words that are repeated and full of educational values. Babies can stimulate from outside. His ability to receive these stimuli has existed since he was still in the womb. Many research proves that the fetus can hear voices both intrauterine and extrauterine. The increase in fetal heart rate when the mother speaks is the evidence it can recognize or respond to its mother. When lifting both hands during Takbiratul Ihram, the shoulder muscles stretch so that the blood flow, rich in oxygen, becomes smooth. The smoother the blood that contains oxygen, the better the effect on the fetus. Pregnant women likely experience emotional instability like anxiety, fear, worry, and happiness. If the negative emotions cannot be handled properly, it is feared that it will lead to depression during pregnancy. After Takbiratul Ihram, pregnant women

are encouraged to recite prayers. This prayer can create a sense of optimism by hoping for goodness from Allah SWT and leaving it to the creator. When raising both hands for Takbiratul Ihram, then the hands together, the muscles in both elbows feel a relaxing effect. With this effect, the blood becomes smooth with the lymph nodes. Therefore, a relaxed body and a resigned mind will help foster a high sense of optimism (Doufesh et al., 2014).

When pregnant, usually, the part of the body that often feels sore is the back of the body. This condition is called sciatica. This stiff feeling occurs in the lower back to the buttocks and down again to the hips until the legs, on 5-6 months of gestation. Sciatica occurs due to enlargement of the uterus so that the nerves in the hip area experience a little pressure. According to Imam Musbikin, who quoted Saboe's statement, standing up straight before starting the Takbiratul Ihram is a very influential position on health. When standing, all nerves are in one point at the brain. If the standing position is correct, the body will be free from the burden because the distribution



**Pict 1. Takbiratul Ihram during Pregnancy**

In addition to Takbiratul Ihram, bowing movements can also help pregnant women strengthen pelvic muscles to support posture changes, strengthen abdominal muscles so that the elasticity of the abdominal muscles can be stable until entering labor. Research conducted by prof. H.A.Sabor showed that the bowing movement has tremendous benefits

for pregnant women. It can flex the joints in the spine. In pregnant women, the spine will support the bodyweight increase with increasing gestational age and the fetus. It can result in stiffness of the spinal joints and often causes discomfort like aches with bowing movements. It can have a relaxing effect. When bow, the spine (vertebrae) will be in a

good position because the joints between the vertebral bodies (*corpus vertebrae*) will feel a relaxing effect. So that the joints become soft and flexible, thus can facilitate the labor process later.

When in a bowing position, the heart position is parallel to the brain. It allows the blood to be pumped to the upper torso

maximally. So that the brain will not lack blood supply to carry out its function thus make a person think clearly, motivate himself to reassure the heart. A feeling of calm is an effective stimulant in stimulating fetal growth, both physical growth and brain, and other intelligence. Positive or not, fetal growth is affected by the calm feeling of the mother.



**Pict 2. Ruku' during Pregnancy**

The I'tidal movement benefits are, increasing the flow of O<sub>2</sub>-rich blood from the brain to the stomach, improving transplacental circulation, blood circulation in the stomach, and stomach work. The movement can also lead to the alternating process of massage and loosening of the abdominal cavity to reduce the sensation of heartburn and meet the oxygen and nutritional needs of the fetus. The benefits of I'tidal movements for pregnant women can facilitate digestion. During pregnancy, there are drastic hormonal changes that also change its physical function, one of which is the digestive organs. Apart from hormonal changes, there are several other factors, namely low blood sugar levels, decreased gastric movements, and anxiety. Symptoms that often appear are nausea, vomiting, heartburn, and constipation. Research conducted by prof. H. A Saboe found that the I'tidal movement in prayer can stimulate natural bowel movements in pushing and removing food waste in the stomach of pregnant women so that it can facilitate the digestive tract. The recommended movement

is as perfect as possible is prostration. Ruku's position by placing both hands, knees, toes, and forehead on the floor is useful for smoothing the flow of lymph pumped to the neck and armpits.

When Prostrating, the heart position is directly above the brain, causing oxygen-rich blood to flow optimally to the brain. Not only that, when prostrating, the muscles in the stomach become straight and long, triggering contractions and increasing pressure so that it eases the pushing process when entering the second phase of active labor and can launch a bowel movement. The effect of Prostration for pregnant women and the fetus in addition to stabilizing emotions can also be related to their general physical condition. The Prostration movement can develop the chest muscles, form a mammae figure, and make the mammary glands wider, causing more milk production. If pregnant women do it correctly, their abdominal muscles will develop and grow. After delivery, the uterus immediately involutes the uterus. So the movement can accelerate



the process of uterine involution. A correctly performed Prostration can change the position of the breech fetus. The fetus in the buttocks position will rotate into the head position. Pregnant women who are prostrating will have their blood circulated into the uterus. Thus the uterus will get enough nutrition and food for

the fetus. The amount of blood flowing into the uterus can also clean the pollution in the uterus so that the fetus becomes more sterile and healthier. Therefore pregnant women are advised to extend the movement duration to make blood flow to the fetus increase.



**Pict 3. Sujud during Pregnancy**

The sitting position, between two Prostrations, when doing the initial Tahiyat, and sitting during the final Tahiyat are positions that can activate the groin muscles in which there is one of the large groin nerves. This nerve is right above the heels of the feet, covered by a muscle that functions as a cushion. With a sitting position like this, the heel will press on the muscles of the groin and the large groin nerves, giving a massage effect. This condition will improve the circulatory system and strengthen the perineal muscles.

Turn your face to the right and left as much as possible, until you see the side of the back. Salam movement is the last prayer movement performed. It is done by turning to the right and left while looking at the shoulder on that side. The benefits of the Salam movement are related to the neck. The neck has many vital parts, such as nerves, glands, blood vessels, muscles, bones, and others. Salam movements can maintain these parts. In addition, the Salam movement has the benefit of making the neck more flexible. The benefits of the Salam movement can also strengthen the muscles and the entire neck (Habibi and Hasbi, 2015). During pregnancy, the body of pregnant women can feel pain due to pressure on the

nerves, including the neck, so that by doing the Salam movement, it can flex these muscles (Habibi and Hasbi, 2015).

Based on table 2, the statistical test results show an effect of prayer movement on blood pressure ( $p < 0.05$ ). One of the non-pharmacological treatments for anxiety and hypertension is physical exercise. One of the physical exercises that are safe for pregnant women is low-intensity exercises such as pregnancy exercise provide beneficial physiological effects for pregnant women. Pregnancy exercise has a positive effect on reducing depression in pregnant women. Pregnant exercise during pregnancy can significantly improve lower pain, feelings of discomfort and stress, and can improve the quality of life (Curtis, Weinrib and Katz, 2012; Berghella and Saccone, 2017).

Exercise recommended for pregnant women to maintain body health, fetus development, and keeping mother's emotions stable are walking, cycling, swimming, pregnancy exercise, hypnobirthing, and yoga. Prenatal exercise is a therapy in the form of activities or movements given to pregnant women to prepare themselves both physically and psychologically to keep the mother and

baby healthy. For primigravida and multigravida pregnant women, it is highly recommended to follow a pregnancy exercise program for the health of the mother and fetus (Smith and Campbell, 2013; Hinman et al., 2015; Berghella and Saccone, 2017).

Pregnancy exercise helps the mother to connect with the baby and her own body through deep practice and build awareness during the birth or delivery process. Physiologically, this yoga exercise will reverse the effects of the stress involving the parasympathetic part of the central nervous system. Pregnancy exercise will inhibit the increase in sympathetic nerves so the hormone that causes body dysregulation can be reduced in number. The parasympathetic nervous system, which has the opposite function of the sympathetic nerve, will slow down or weaken the work of the body's internal organs. As a result, there is a decrease in heart rate, breathing rhythm, blood pressure, muscle tension, metabolic rate, and the production of stress-causing hormones. As the levels of stress-causing hormones decrease, the whole body begins to function at a healthier level with more energy for healing, restoration, and rejuvenation. Thus, pregnant women will feel relaxed along with decreased anxiety symptoms (Hinman et al., 2015; Shohani et al., 2018; Soltani et al., 2019). Yoga also improves the self-control of pregnant women to face their labor (Curtis, Weinrib and Katz, 2012). It is the same with the research result By Rahayu et al., the provision of physical activity of yoga can improve self-control and quality of life for female students. There is a significant effect of yoga physical activity results on increasing self-control ( $p = 0.001 < 0.05$ ) (Rahayu, Amalia and Damayanti, 2020)

There are many benefits of exercise movements. This research modifies the prayer movements as an exercise for pregnant women, given how special the prayer movement is. Following several research results, there are many benefits of the prayer movement when viewed from the health aspect of prayer, which can have a therapeutic effect on humans. By performing the prayer movements perfectly and correctly, the body organs will be healthy. It is due to it calming the soul or relaxing so that blood circulation becomes smooth and

the muscles in the body relax. These benefits can also be felt by pregnant women with their beloved children due to the therapeutic effect when it is done correctly, solemnly, intended to worship, and get closer to Allah SWT (Doufesh et al., 2014).

The rate at which blood flows through the entire circulatory system is the same as the rate at which the heart pumps blood, equal to the cardiac output. The contents of the heart rate are affected by the filling pressure (preload), the force generated by the heart muscle, and the pressure the heart has to resist when pumping (afterload). Normal afterload is related to aortic pressure for the left ventricle, and arterial pressure for the right ventricle. Afterload increases when blood pressure increases or when there is stenosis (narrowing) of the exit artery valve. An increase in afterload will decrease cardiac output if cardiac strength does not increase. Both heart rate and force generation are regulated by the autonomic nervous system (ANS). The relationship between pressure, resistance, and blood flow in the cardiovascular system is hemodynamic. The nature of this flow is very complex, but basically the smoother the circulation, the blood pressure will be normal. Exercise, including pregnancy exercise, can increase cardiac output which will be accompanied by an increase in oxygen distribution to the parts of the body that need it, while the parts that do not need oxygen will occur vasoconstriction, for example, the digestive tract. Increasing cardiac output will certainly affect blood pressure (Loomba et al., 2012; Smith and Campbell, 2013).

Understanding blood pressure on a person's level of anxiety is very varied. It had been argued if someone is experiencing anxiety, blood pressure will rise. Blood pressure increases and decreases depending on nutrition, sleep, movement, and perceived stress. Increased heart rate is one of the contributors to increased blood pressure. When experiencing anxiety, heart rate would increase. It is possible to pump blood to the part of the body that needs to fight or flee when threatened. But the increase in cardiac output causes an increase in blood pressure which raises systolic blood pressure, while diastolic is generally unaffected. Based on the statement above, we concluded that

blood pressure fluctuates randomly throughout the day because of power, diet, hydration, and more. Blood pressure is not constant, even if a person does not have any anxiety. Heart rate and blood pressure tend to be related to being anxious. Adjusting blood pressure with anxiety will eventually return to the base level. Changes in blood pressure tend to be high in the short term and usually occur in the early anxiety stages or during a panic attack. One indicator of a person's anxiety is by the increased blood pressure of that person, but we still need another instrument that can indicate the anxiety level of a person (Kusuma and Bin, 2017).

Based on table 2, the results of statistical tests show an effect of prayer movement on pregnant women's anxiety ( $p < 0.05$ ). Apart from affecting blood pressure, the prayer movement also affects the anxiety of the third trimester of pregnant women. Anxiety in the 3rd trimester of pregnant women is an unpleasant emotional state, which is characterized by fear and stressful and unwanted physical symptoms experienced by pregnant women from the 28th to the 40th week of pregnancy (Thoma et al., 2013; Astuti and Hadisaputro, 2019).

Antenatal anxiety is considered a risk factor for maternal mental health problems, such as increasing the likelihood of postpartum depression. Furthermore, longitudinal studies have shown that babies born to pregnant women with high anxiety are at greater risk of developing behavioral problems in neonates and toddlers. Likewise, specific anxiety, such as fear of having a deformed baby, is associated with increased salivary cortisol in neonates. The mechanism of increased anxiety can trigger an adverse outcome, triggered by over-stimulation of the hypothalamus-pituitary-adrenal (HPA), with increased secretion of glucocorticoids such as cortisol. Some studies that link the increased risk of preterm birth to an increase in anxiety scores between the second and third trimesters (Ghiasi and Keramat, 2018; Schetter and Tanner, 2015).

In pregnancy exercise movement, there is a relaxing effect that can stabilize the emotions of pregnant women. Relaxation is very useful for reducing stress during pregnancy (Desmawati, Kongsuwan and Chatchawet, 2019; Rajeswari and Sanjeevareddy, 2020). Pregnant exercise

that is given regularly in the absence of very pathological conditions will be able to guide women to get complete calm and relaxation (Lalji et al., 2014). Physiologically, exercise will reverse the effects of the stress involving the parasympathetic part of the central nervous system (Barakat et al., 2011; Schetter and Tanner, 2015).

It happens because, during pregnancy exercise, it will inhibit the increase in sympathetic nerves so that the number of hormones that cause body dysregulation can be reduced. The parasympathetic nervous system, which has the opposite function of the sympathetic nerve, will slow down or weaken the work of the body's internal organs. As a result, there is a decrease in heart rate, breathing rhythm, blood pressure, muscle tension, metabolic rate, and the production of stress-causing hormones. As the levels of stress-causing hormones decrease, the whole body begins to function at a healthier level with more energy for healing, restoration, and rejuvenation. Thus, pregnant women will feel relaxed along with decreasing symptoms of anxiety (Barakat et al., 2011; Schetter and Tanner, 2015; Doufesh et al., 2014; Akbarzade et al., 2015; Rajeswari and Sanjeevareddy, 2020).

Prayer movements performed appropriately following the guidance of a therapist will help stimulate the joints of organs such as the neck, arms, fingers, wrist, knees, and feet. In addition, the prayer movement can also have a traction effect on the body muscles. The tension of the body muscles, especially blood vessels, will help blood vessels to return to elasticity (Kusuma and Bin, 2017; Desmawati, Kongsuwan and Chatchawet, 2019). The prayer movement modified for pregnancy exercise aims to reduce the anxiety felt by pregnant women. It is aligned with research results obtained. Takbiratul ihram with your hands together has tremendous benefits, especially for pregnant women and their fetuses. One of them is to foster an optimistic attitude. Pregnant women usually experience emotional instability like anxiety, fear, worry, and happiness. If the negative emotions cannot be handled properly, it will lead to depression during pregnancy. After Takbiratul Ihram, pregnant women are encouraged to recite prayers. This prayer can create a sense of optimism by hoping for the

goodness of Allah SWT and leaving it to the creator. When raising both hands for Takbiratul Ihram, then the hands together, the muscles in both elbows feel a relaxing effect. With this effect, the blood becomes smooth with the lymph nodes. Therefore, a relaxed body and a resigned mind will help foster a high sense of optimism (Conversano et al., 2010; Feng, Li and Chen, 2015).

## Conclusion

Based on the results, there is an effect of prayer movement on the anxiety of third-trimester pregnant women and prayer movement effect on the blood pressure of third-trimester pregnant women. The advice given is that everyone's anxiety level is different and is affected by many factors, such as income, ethnicity, culture, place of residence, and so on. We hope that future research will be able to examine these factors. In addition, this prayer movement can be used as an alternative to exercise for pregnant women to support the physical and psychological conditions in the 3rd trimester because it can normalize blood pressure and reduce anxiety.

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