



The Effect of *Maryam* Prenatal Exercise on Labor Duration: A Systematic Review

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Abstract. The Extension of labor duration is associated with increased morbidity and mortality. Prenatal exercises have proven a positive effect on labor but still a deficient level of effectiveness against the labor duration. Salat has demonstrated a positive impact on fitness, healthy, and has a rehabilitative effect. Maryam Prenatal is a modification of basic prenatal exercise with postural bowing, sitting, and prostrating like salat in Islam with dzikr. This systematic review aims to assess the effect of Maryam Prenatal on the labor duration. The systematic literature search with study criteria that examined physical exercise for labor duration and salat for health was carried out on the PubMed, Science Direct, and research gate and scholar databases. Study quality was assessed by a tool of standard quality assessment of the quantitative study (QATQS). This review received five intervention studies, one retrospective, and five observational studies. Five articles showing positive results on reducing the labor duration and five articles on salat show positive results to the health. Our overall conclusion that the hypothesis of Maryam Prenatal exercise positive effect on the labor duration with an increase in the effect size. Therefore, we recommend further research that considers the influence of Maryam Prenatal as a new method of pregnancy exercise on labor duration.

Keywords: prenatal Maryam; physical activity; prenatal exercise; labor duration.



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INTRODUCTION

Duration is an essential indicator of the normality of labor. Extension of labor duration is associated with increased morbidity and mortality (1). This morbidity is related to maternal complications in the form of infections, perineal and vaginal

lacerations that are widespread, the emotional distress of traumatic labor, and complications in Newborns in the type of hypoxia and injury (2, 3).

Every day, around 830 women die because of complications related to pregnancy or childbirth throughout the world. The Maternal Mortality Rate (MMR) in developing countries in 2015 was 239 per 100,000 live births (4, 5). Meanwhile, in Indonesia is 305 per live birth (6). The extension of the duration of labor is still one of the causes(7).

Efforts to reduce MMR can be done by accessing quality maternal health services, including maternal health services and delivery assistance by trained health personnel in health care facilities. The pregnant women exercise group is one of the efforts to improve the quality of service and development of primary health programs from the government.

Epidemiological data based on the United States National Health and Nutrition Examination Survey (NHANES) shows that only 15% of pregnant women have national recommendations of a minimum of 150 minutes of moderate physical activity per week. Exercise during pregnancy is recommended to be started or continued for pregnant women without complications. Pregnant women can do moderate-intensity exercise for at least 20-30 minutes per day on most or all days because this has significant benefits for them (8). Prenatal exercises can reduce the risk of labor complications and macrosomia (9). Research on physical activity in pregnancy has been shown to reduce the duration of labor in 1st,2nd,3rd stages as a whole (1, 10-15).

The analysis of internal factor matrices in the implementation of the Pregnant Women Class program in Indonesia states that pregnancy exercise is a reinforcing factor for the implementation of a pregnant women class program that can be continuously developed (16). However, several studies regarding essential pregnancy exercise on the duration of labor show a very low level of effectiveness. In addition to physical activities such as walking, gardening, aerobics, yoga, pilates, and others, prayer is also one form of postural physical activity that has been shown to affect health (17-19).

The study of estimation of muscle activity through electromyography (EMG) during prayer illustrates the contraction and relaxation of muscles, which results in an agonist-antagonistic response that is important for physical exercise characterized by the increase of EMG in Bicep Brachini and Erector Spinae. This benefits human health and prolongs life (20). The presence of contractions and relaxation in bowing and prostrating positions can help the development of a rehabilitation program in sufferers of back pain (21). optimal physical and mental preparation in pregnant women will affect the power of the mother during childbirth. Maryam Prenatal is a modification of basic prenatal exercise with postural bowing, sitting, and prostrating like sholat in Islam with dzikr. Nevertheless, the overall effect of physical activity in prenatal Maryam has not been systematically reviewed

OBJECTIVE

The study aimed at examining the effect of Maryam prenatal exercise on the duration of labor

METHOD

Data sources

Systematic literature searched from studies that examined the effect of physical activity, physical exercise and prayer on the strength of contractions and duration of labor

were carried out in the Pubmed, Sciendirect, Researchgate and scholar databases
Search strategy

The keywords searched, including 'Prenatal Maryam,' 'Salat,' 'Physical Activity,' 'Prenatal Exercise,' and 'Labor Duration.' The search was completed in August 2019

Eligibility criteria of the study

In this systematic review, all studies must have the following inclusion criteria:

- (1) the study should assess the influence of Physical Activity (physical activity can be in the form of basic prenatal exercise, aerobic, yoga, etc.) in pregnancy on duration of labor or prayer in Islam on the health;
- (2) Quantitative study to identify, choose, rate, and summarize findings from similar studies or relevant research, so that the facts presented become more comprehensive and balanced;
- (3) papers can be published or are still in the process of being released because the purpose of this systematic review is to provide an overview of all studies that assess physical activity against the duration of labor or prayer for the health.

A total of 78 articles filtered based on inclusion criteria from abstracts and titles to 24 articles. A total of 54 articles were issued because they did not have the requirements. The 24 articles then filtered again to 11, and 13 were released for specific reasons.

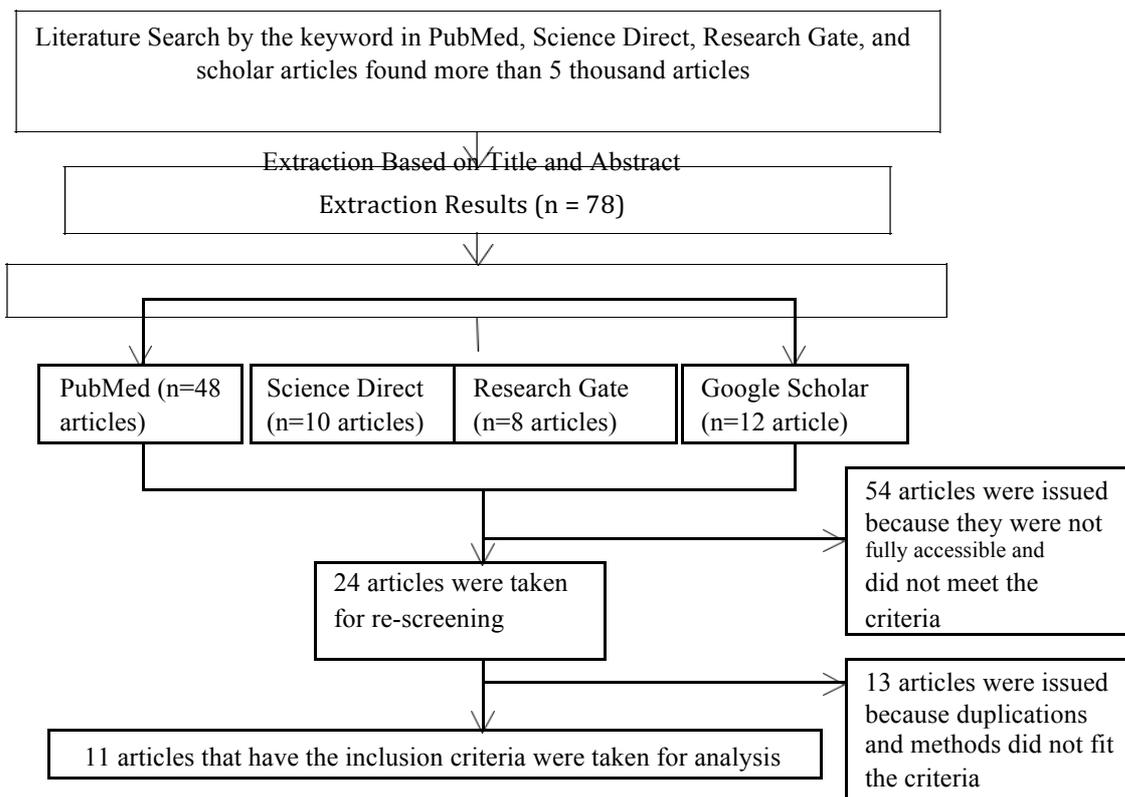


Fig.1 Flow diagram of literature search

Data extraction procedure

Data extraction is conducted by using tables that consist of the name of the researcher, design, sample and subject, intervention method, study results,

measurement techniques, time of measurement, and data analysis. Assessment for each study uses QATQS.

Quality Assessment and controlling the potential bias procedure

To assess the articles sampled in this review, the tools used as a measure of standard quality in quantitative studies are QATQS (22-24). The assessed component consists of: (a) selection bias, namely how far the population representation is taken as the research sample; (b) research design; (c) confounding factor control; (d) sample and appraisal processing process; (e) instrumentation and data collection tools; (f) the number and reasons for dropping out. In a study which is using an intervention and observational design in point (d) could not be applied because the researcher and participants were very likely to know the results of randomization. Assessment results were classified into three categories, such as high, medium, and low at each point. Then categorized as a whole with high provisions if in each component there is no rating of small and medium, medium if there is one rating on the low part if there are two or more ranking on low components (25).

Quality Assessment of these studies showed that studies with stable overall rankings are Barakat, R, and Romadhon articles (1) and nine other articles with moderate ratings. While one article with weak ratings from Tinius, R (26). In detail, the quality assessment of articles based on the QATQS component (22, 23).

Table 3. Article quality assessment

First Author, year	Representative Veness	Design	confounding variable	Blinding	Method	Drop Out	Overall rating
Barakat, R (1)	Strong	Strong	Strong	Not applicable	Strong	Strong	Strong
Jahdi, F (13)	Strong	Strong	Strong	Not applicable	Medium	Strong	Medium
Luciano Rodríguez-Díaz (14)	Strong	Strong	Strong	Not applicable	Medium	Weak	Medium
Tinius, R. A (26)	Strong	Medium	Strong	Not applicable	Weak	Weak	Weak
Hilal Yuksel (27)	Strong	Strong	Strong	Not applicable	Weak	Strong	Medium
Doufesh, H(17)	Strong	Strong	Weak	Not applicable	Strong	Strong	Medium
F. Khanam (20)	Weak	Strong	Weak	Not applicable	Strong	Strong	Medium
Rabbi, Mohammad (28)	Weak	Strong	Weak	Not applicable	Strong	Strong	Medium
Uddin Ahamed, Nizam (29)	Weak	Strong	Weak	Not applicable	Strong	Strong	Medium
Mukhamad Rajin(30)	Medium	Strong	Weak	Not applicable	Strong	Strong	Medium
Romadhon(31)	Strong	Strong	Strong	Not applicable	Strong	Strong	Strong

RESULTS

Eleven articles were included in this systematic review with details of 5 articles referring to physical activity to the duration of labor and six articles referring to prayer for health. From the 11 articles, four studies used the Randomized Control Trial post-test only design. I study used the Randomized Control Trial pre and post design, five studies used

observational drawings, and 1 study used a retrospective design. 6 Studies with observational designs measured muscle and autonomic nervous system activity in prayer activities, 1 study measured blood glucose level, and five other studies measured the outcome of labor.

Barakat study showed the result that statistically significant differences were found between the probability for intervention group Compared to the control group ($Z = -2.37$, $p = 0.018$). Aerobic exercise as interventions applied three times a week from the 9-11th week (immediately after the first prenatal ultrasound) to the end of the third trimester (weeks 38–39) proved to shorten the duration of labor, besides other positive results. Movements in this moderate-intensity aerobic exercise are applied to pregnant women with a gestational age of 9-11 weeks. The stages of exercise, in combination, consist of strengthening, aerobic resistance, light muscle strengthening, coordination, and balance, stretching, pelvic floor sequencing, relaxation, and falal talk. Some movements use barbell 2 kg. The participant's heart rate was monitored with Finnish accurex.

Meanwhile, the control group was only given standard pregnancy care. The measurement technique and time are for the first stage measurement start from cervical dilatation three cm-10 cm, and step 2 starts from 10 cm dilatation until the baby is born. The third stage starts from after the expulsion of the baby to the birth of the placenta and membrane. Duration is measured based on the length of time in minutes. BMI before the mother pregnant and after the intervention is complete. For birth weight, after the baby is born, weighing is done.

Jahdi's study showed that the effect of yoga on the duration of 1st stage did not differ significantly but significantly on length of the second and third stages ($p = 0:04$ and $p = 0:01$ respectively). Yoga interventions consist of 5 components, namely: yoga asanas, singing, breathing awareness, yoga Nidra, Dhyana practice, or something like Pilates or Tai Chi. Participants performed yoga three times per week and should be encouraged to do every day. The intervention was applied from 26 to 37 weeks' gestation. Participants received booklets and DVDs as guides. The measurement technique and time start from dilating 3 to 10 cm, 2nd stage starts from 10 cm cervical dilatation until the baby is born, and 3rd stage starts after the baby is taken until the birth of the placenta. Duration is measured based on the length of time in minutes.

The result of Luciono's study showed that a statistically significant improvement noted is ($p < 0.001$) in the evaluation after completing the Pilates program. This includes no dystocia delivery, no episiotomy, less epidural analgesia, and lower birth weight compared with the control group. Pilates exercises consist of abdominal, back, arm, and leg muscle strength training applied for eight weeks. Measurement technique for labor duration is the presence or absence of dystocia. Tinius study also showed the total time delivery of active obese pregnant women significantly shorter than those who do not have active ($p = 0.048$). He Searches for the last five years at the Medical Center and searches for physical activity for at least 150 minutes per week. Measurement technique for labor duration is starting from the beginning of labor since the patient comes to the clinic until labor is finished.

There are significant effects on one session breathing exercises as an intervention to labor duration with $p = 0.000$ on the 2nd stage in Hilal research. Intervention is carried out by giving practice of one session of breathing exercises before giving birth. Breathing exercises consisted of including A) breathing deeply; B) Feel the expansion in stomach; C) Get relaxation of the muscles from the stomach to the knee; D) When pain comes, take a deep breath with abdominal breathing and hold as much as possible; E) Try to push the baby down like defecation; You can do this by holding your breath or breathing out quite slowly from your mouth; G) at this stage participants may not breathe in the breath of the stomach but continue to push the baby down until the pain is relieved. The participants were observed

during the entire second stage, and their breathing progress was monitored. The measurement technique is the 2nd stage duration.

Five articles that reported results on Physical Activity on the duration of labor showed that physical activity carried out from low to moderate intensity in pregnant women at varying gestational ages (1,2 and 3 trimesters) had a significant effect on reducing the duration of labor. Prenatal Maryam is included in moderate-intensity physical activity. The basic pregnancy exercise movements that are available in prenatal Maryam are warm-up, leg stretching, transverse exercise, exercise lifting or swinging the pelvis, pelvic floor exercises, leg exercises, squat-standing exercises, and breathing exercises. Use in pregnancy is proven to shorten the duration of labor (32).

Table 1. Characteristics of the Study

Author, Year	Study Design	Sample	Intervention	Measurement technique	Measurement Time	Data Analysis	Research Results
Barakat, R(1)	RCT	Intervention n=255, control n=253	Moderate-intensity aerobic exercise 3 times in a week from the 9-11th week (immediately after the first prenatal ultrasound) to the end of the third trimester (weeks 38–39)	Measurement of 1 st and 2 nd stage duration (time in minutes), pre-pregnancy Body Mass Index (BMI) and Birth Weight (gram)	When the first stage measurement starts from cervical dilatation, three cm-10 cm and stages two starts from 10 cm dilatation until the baby is born. the third stage starts from after the expulsion of the baby to the birth of the placenta and membrane, BMI before the mother pregnant and after the intervention is complete, after the baby is born weighing is done	The Mann-Whitney test was conducted to analyze possibilities differences between groups in continuous variables (Labor duration, pre-pregnancy BMI, and neonatal birth weight).	There were significant differences between the intervention and control groups. (Z = -2.37, p = 0.018) That total duration from the 1 st -3 rd stage is a significant difference (p=0,01). Separately significant results at the 1 st stage but not significant at the 2 nd and 3 rd stages. Birth weight (p=0,01), maternal weight gain (p=0,02),
Jahdi, F (13)	RCT with single-blind	Interventions n=30, controls n=30	60-minute yoga is done three times a week start from 26-37 weeks gestation and are encouraged to do it every day	Measurement of duration 1 st , 2 nd and 3 rd stage (in minutes)	It starts from dilating 3 to 10 cm, 2 nd stage starts from 10 cm cervical dilatation until the baby is born and the 3 rd stage starts after the baby is born	Analysis using t-test and chi-square	The duration of the 1 st stage is not significantly different. In the duration of the 2 nd stage and 3 rd stage, there were significant differences between the intervention and control groups

Author, Year	Study Design	Sample	Intervention	Measurement technique	Measurement Time	Data Analysis	Research Results
					until the birth of the placenta		(p=0.04 and 0.01).
Luciano Rodríguez-Díaz(14)	RCT	Interventions n=50, controls n = 55	Pilates 40-45 minutes 2 times a week for eight weeks	Assessment The birth process that is not dystocia (stuck/long)	The overall process of labor is assessed	t-test or the Chi-square test for related samples	Statistically, a significant increase recorded (p <0.001) in evaluating labor. This includes no dystocia delivery, no episiotomy, less epidural analgesia, and lower birth weight, compared to the control group.
Tinius, R. A (26)	Retrospective	Active fat pregnant women n=48, inactive pregnant women n=48	Search for the last five years at the Medical Center and search for physical activity for at least 150 minutes per week	Through medical records the overall duration of labor	Starting from the beginning of labor since the patient comes to the clinic until labor is finished	Analysis using t-test and chi-square	The total delivery time of active obese pregnant women was significantly shorter than those who do not remain active (p = 0.048)
Hilal Yuksel (27)	RCT	Intervention group n =125, control group n = 125	Intervention is carried out by giving practice of breathing exercises before giving birth	Measurement of the 2 nd stage duration	Duration of 2 nd stage of labor	Independent sample t-test and χ^2 The test was used to analyze the differences between the groups. P < 0.05 was set as the threshold for significance.	There were significant differences between the intervention and control groups with p = 0.000

Five articles that reported results regarding prayer activities on body health through Electromyography (EMG) and Electroencephalography (EEG) measurements showed positive results for body health in both men and women. One study assessed the effect of prayer on the activity of the autonomic nervous system that regulates the performance of sympathetic and parasympathetic organs. The results during prayer showing a significant positive relationship between RP α in the occipital and parietal and nuHF (as an index of parasympathetic patterns) and a significant negative correlation between RP α in nuLF and LF / HF (as an index of sympathetic patterns). It interpreted the physiological mechanism between the Central

Nervous System (CNS) and the Autonomic Nervous System (ANS) during prayer to promote relaxation and minimize anxiety (Doufesh et al., 2014). Measurement technique for this search are EMG and EEGs were continuously recorded before, during, and after salat practice with a computer-based data acquisition system (MP150, BIOPAC Systems Inc., Camino Goleta, California). Three stages of measurement are pre baseline, Shalat Dhuha practice, and post-baseline. Romadhon's research shows the results that prayer can reduce stress levels with bivariate analysis results obtained two parameters that are significantly correlated and marginally significant. First, there is a negative correlation between the average ERP total moment takbir with heart rate $r = -0.616$, $p = 0.019$. It was indicated that every 1 point increase in level Prayer cognitive activity (overall average ERP) when takbir is correlated with a decrease of 61.6 percent of heart rate frequency per minute. Second, a negative correlation is a relationship between solitude with stress levels with a value of $r = -0.487$ and $p = 0.077$, which means that each increase one point the level of solitude occurs stress level reduction of 48.7 percent(31).

While three other articles showed that prayer increased the electrical activity of the muscles (Bicep Brachii, Erector spinae, trapezius muscle, and gastrocnemius Medialis). It was beneficial for fitness, physical health, and rehabilitation programs, in prenatal Maryam practice, the core movement added a postural prayer movement accompanied by dzikir. This movement produces opposing movements that are important in training and increases electrical muscle activity (Khanam et al., 2015). The coping mechanism of dhikr also helps mothers in psychological preparation to face labor (33). Both of these are beneficial for the mother in increasing power. Power is one of the main factors in labor that affects the duration of labor. Mukhamad Rajin Study showed that Dhuha prayer performed with tuma'ninah could decrease blood glucose levels significantly. Duha prayer with tuma'ninah and special 'can be used as an alternative a substitute for exercise in the morning for reducing blood glucose levels, especially in diabetics Mellitus, and to maintain health in general (30).

Table 2. Characteristics of studies

Author, Year	Study Design	Sample	Intervention	Measurement technique	Measurement	Data Analysis	Research Results
Doufesh, H(17)	Observation	30 healthy men	Shalat Dhuha	Electrocardiograms and EEGs were continuously recorded before, during, and after salat practice with a computer-based data acquisition system (MP150, BIOPAC Systems Inc., Camino Goleta, California).	Three stages of measurement are pre baseline, Shalat Dhuha practice, and post-baseline	Power spectral analysis was conducted to extract the $RP\alpha$ and HRV component	During salat, a significant increase ($p < .05$) was observed in the mean $RP\alpha$ in the occipital and parietal regions and the normalized unit of high-frequency (nuHF) power of HRV (as a parasympathetic index). Meanwhile, the normalized group of low-frequency (nuLF) power and LF/HF of HRV (as sympathetic indices) decreased according to HRV analyses. $RP\alpha$ showed a significant positive

Author, Year	Study Design	Sample	Intervention	Measurement technique	Measurement	Data Analysis	Research Results
							correlation in the occipital and parietal electrodes with nuHF and significant negative relationships with nuLF and LF/HF
F. Khanam (20)	Observation	Ten respondent (5 men and five women)	Shalat and treadmill	Electrical measurements of Bicep muscle, Spinae and Gastrocnemius Medial were measured using EMG	Measurements are conducted at rest, Shalat in a standing motion, bowing, prostrating and sitting and during treadmill	EMG analysis of electrical muscle activity using Acknowledge software	During Salat, Bicep Brachii and Erector Spinae produce better EMG level for both male and female subjects against Treadmill exercise. On the other side, GM has higher EMG during Treadmill than Salat.
Rabbi, Mohamamd (28)	Observation	Seven respondent	Sholat	Measurement of electrical activity of Trapezius Muscle and Erector muscles using EMG	Measurement during standing position, bowing, prostration and sitting in Salat	Data were analyzed by MATLAB ware and further analysis using ANOVA	The trapezius muscle remains relaxed during the standing and sitting positions, and the erector spine muscle remains contracted during these two positions. Additionally, during the bowing and prostration positions of Salat, these two muscles exhibit the opposite activities: the trapezius muscle remains contracted while the erector spinae muscle remains relaxed. Overall, both muscles maintain a balance in terms of contraction and relaxation during bowing and prostration position.
Uddin Ahamed, Nizam (29)	Observation	Five respondent	Sholat 2 Rakaat	Measurement of muscle electrical signals used EMG 2 channel SHIMER (SHIM-Kit-004 model) that used sensors connected to Bluetooth	Measurements with protocols for each rakaat are carried out with a fixed amount of time in	The time-domain feature is calculated using IEMG, MAV, RMS, VAR, and ZC while	Firstly, it has been found that the activity of the upper back muscle has a strong correlation with that of the lower back muscle during Salat performance. Although the

Author, Year	Study Design	Sample	Intervention	Measurement technique	Measurement	Data Analysis	Research Results
					four positions, such as standing, bowing, prostration, and sitting. In each subject, the position requested stable for 10 seconds and the gap between positions for 5 seconds. Between rakaat 1 minute gap	the frequency domain uses the average frequency (MNF) and middle frequency (MDF)	activity of the upper back muscle is stronger than that of the lower back, the upper back remains more stable than lumber muscle. Secondly, it has been found that there is a minimal possibility of muscle fatigue in the back muscle during Salat.
Mukhammad Rajin(30)	Randomized Control Group pre and post-test design	30 respondent	Dhuha prayer is performed for 30 minutes (8 rokaat) with special 'and tuma'n inah which is carried out in the congregation	Measurement Blood glucose levels use capillary blood sample with Glucose Test. Before good sampling in groups and control are not allowed to eat and drink (puasa) for Eight hours, then given a glucose solution 100g / 300ml to drink.	after 30 minutes the drinking sugar solution is measured blood glucose (30 minutes Postprandial) as pre-test data, and 90 minutes postprandial as post-test data.	Analysis T-test statistical tests performed with a significance level of p = 0.05	Results test of Independent T-test, Before praying Dhuha got value $\rho = 0.650$, whereas, after prayers, Dhuha got value $\rho = 0.000$. From these test results, the researchers concluded that there was an effect of prayer Dhuha With Decreased blood glucose levels.
Rhomadon . YA(31)	Observation	14 respondent healthy men	Respondents were instructed to sholat in a sitting position and	electrically tapped the brain with quantitative EEG method. The method of measuring brain cognitive activity with the ERP model compares	performed in the morning at dhuha prayer	Size of the parameters are tested with that parameter obtained from	Bivariate analysis results obtained two parameters that are Significantly Correlated and marginally significant. First, there is a negative correlation between the average ERP

Author, Year	Study Design	Sample	Intervention	Measurement technique	Measurement	Data Analysis	Research Results
			closed their eyes	each amplitude at takbir and three sampling recording segments of prayer time free of artifacts, with basal amplitude. Tested the average total ERP parameters, left / right ERP average ratio, all pro/counter cognitive ratios at takbir to be correlated with variations in heart rate at takbir. Other parameters tested were solubility score, anxiety level, depression level and stress level with questionnaire depression anxiety scale stress (DASS 21).		quantitative EEG data and calculation of heart rate variations. Bivariate analysis where data is The result is continuous, so the alternative is done by correlation Pearson when the data distribution is parametric, and if non-parametric Spearman correlation was performed.	total moment takbir with heart rate $r = -0.616$, $p = 0.019$, meaning that every 1 point increase in the level Prayer cognitive activity (total average ERP) when takbir is correlated with a decrease 61.6 percent of heart rate frequency per minute. Second, negative correlation is a relationship between solitude with stress levels with a value of $r = -0.487$ and $p = 0.077$, which means that each increase one point the level of solitude occurs stress level reduction of 48.7 percent.

DISCUSSION

This systematic review was carried out on nine scientific articles consisting of 5 articles on exercise in pregnancy on the labor duration (1, 13-15, 26, 27) and four articles on prayer for body health (17, 20, 21, 29). Articles were about physical exercise in pregnant women on the duration of labor; each of them has a different physical exercise intervention. Research conducted by Barakat with aerobic interventions from the 9-11th week (immediately after the first prenatal ultrasound) to the end of the third trimester (weeks 38–39) in primiparous mothers and the results had a significant effect on the duration of labor. The significance is in stage 1 labor duration but not in steps 2 and 3. the intervention in this study focused more on physical strength and lacked training in flexibility and breathing, which was very useful in the second stage of labor. Research conducted by Jahdi used yoga interventions at 26-37 weeks of gestation for 12 weeks in primiparous mothers, and the results had a significant effect on reducing the duration of labor in stages 2 and 3.

The study conducted by Luciano used Pilates intervention at 26-28 weeks. It ended at 34-36 weeks for eight weeks in a different sample but most primiparas with a significant effect on physical rehabilitation, especially blood pressure and bone shape, and influence other forms of labor. This pilates intervention seen from the parameters of labor had a significant effect on the average labor process (absence of dystocia) and suppressed complications. Hilal's study used a breathing exercise intervention of 1 session during pregnancy before labor and applied it during the second period with results that significantly affected the reduction in the duration of labor 2nd stage. The study conducted by Tinius used a

retrospective search of physical activity carried out by mothers during pregnancy and viewed the delivery data with results that significantly affected the reduction in labor duration.

Based on five articles, four above showed significant results in reducing the duration of labor, and 1 showed a significant effect on labor but did not specify the parameters of the duration of labor. This proved that physical exercise in pregnant women is needed as an effort to reduce labor complications, especially related to the extension of labor duration.

Research related to physical activity in prayer also showed significant results on health. An observational study conducted by Doufesh in 30 men using EEG and ECG showed that prayer consisting of standing postural movements, bowing, prostration and sitting with dzikir had a significant positive correlation with $RP\alpha$ in occipital and parietal electrodes with nuHF and significant negative correlation with nuLF / HF. This showed that during prayer, parasympathetic activity increases, and sympathetic decreases, which means that prayer can improve relaxation, minimize anxiety, and reduce cardiovascular risk.

The research conducted by F. Khanam explored the potential of muscles and their strength through movement and position of prayer and treadmill performed on five men and five women average age of 23 years. The measurement used EMG by assessing the current time and inactivity of muscle biomechanical responses. The results of this study indicated that during prayer, both male and female, there was an increase in the active time of biomechanical (contraction and relaxation) response of Bicep Brachii, Erector spinae, and gastrocnemius Medialis muscles compared to treadmill. This proved that prayer builds physical performance and produces better energy so that it was able to provide benefits for health and muscle therapy.

Rabbi investigated the electrical activity of the trapezius and erector spinal muscles in 7 participants who performed the prayer using EMG. This study showed the results of the opposite activity in the shoulder and waist muscles, increasing the balance that affects the rehabilitation program. An observational study conducted by Uddin on 5 Muslim students investigated muscle activity on the dorsal side of the human body. The tool used is EMG to assess the time domain and frequency of signal features captured. This study showed that upper back activity was stronger than the lower back muscles during prayer, but the upper back muscles remained more stable and were less likely to cause muscle fatigue. This was able to be the basis for developing a rehabilitation program for back pain. Mukhamad Rajin Study showed that Dhuha prayer performed with tuma'ninah could decrease blood glucose levels significantly. Duha prayer with tuma'ninah and special 'can be used as an alternative a substitute for exercise in the morning for reducing blood glucose levels especially in diabetics Mellitus, and to maintain health in general (30)

Prenatal Maryam exercise is a combination of basic exercise movements in pregnancy with postural bowing, sitting, and prostration as in prayer with dzikir. The exercise procedure included warm-up and stretching for about 5 minutes, 3-minute for bowing movements, leg stretches, chest exercises involving movement of the upper arm in the joints and related to breathing exercises, thigh exercises, leaning forward with the legs crossed, sitting down like in prayer with stretching hands, squat exercises, crawling, prostrating 3 minutes, exercising legs in a lying position, lifting the pelvis in a lying position, relaxing the sleeping position on its side and ending with praying for each other among exercise participants.

This Prenatal Maryam involved a lot of muscle performance, which was going to affect the muscle strength of the mother in physical preparation before labor. The rehabilitative effects of postural prayer were able to reduce pain complaints during pregnancy. This exercise can be done by healthy pregnant women from the middle of the second trimester, except abdominal movements, which should only be done at term gestational age. We still recommend doing it in stages, both from the movement and from the duration of the implementation. Pregnant women can do moderate-intensity exercise for at least 20-30

minutes per day on most or all days (8). This means that prenatal Maryam can be done almost every day with a short duration (15-20 minutes) or can also be done three times a week with a period of 30-60 minutes per session.

Dhikr included in this exercise procedure will improve coping skills and mental readiness of mothers in childbirth, especially for women Muslim. This method was the practice of pregnant women as antenatal health serviced in the midwives clinic in Sleman, Yogyakarta region in Indonesia. So many factors against the labor process like power, passage especially for strength and elasticity for muscles and other tissue on the birth canal, passenger, psychological or mental. All of that factor can be manipulated to increase the quality of antenatal health services with prenatal Maryam. The measurement of the duration of labor can be done by assessing the period of labor at the time of delivery of prenatal Maryam participants. Methodological research can be done to prove our hypothesis that prenatal Maryam affects the duration of labor with an increase in effect size. Further research can also be done for the development of variables in prenatal Maryam-related studies or Maryam exercises in pregnant women as a new method of pregnancy exercise

CONCLUSION

Maryam prenatal exercise is a combination of basic pregnancy exercises with postural prayer movements that can be practiced and developed as new engaging and holistic prenatal exercises. Methodological research can be done to prove our hypothesis that prenatal Maryam affects the duration of labor with an increase in effect size. Further research can also be done for the development of variables in prenatal Maryam-related studies or Maryam exercises in pregnant women as a new method of pregnancy exercise.

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