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THE EFFECT OF PRENATAL YOGA ON THE INCIDENCE OF CONSTIPATION ON THE DISCOMFORT OF PREGNANT WOMEN

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ABSTRACT
During pregnancy, significant physiological changes occur that can cause discomfort in pregnant women. One of the discomforts experienced by pregnant women is the occurrence of constipation. Constipation in pregnant women is caused by an increase in progesterone production which causes a decrease in smooth muscle tone, including in the digestive system, resulting in a slowdown of the digestive system. Prenatal yoga can be one of the alternative non-pharmacological therapies to reduce such discomfort. Objective to determine the effect of prenatal yoga on the incidence of constipation on the discomfort of pregnant women. Pre-experiment with a pre-post test control group design research. The number of samples used was 30 people. The sampling technique used purposive sampling, with the inclusion criteria of pregnant women in the second trimester who were willing to participate in all stages of the study and had no contraindications to do prenatal yoga. The experimental group will follow a prenatal yoga session conducted for 6 weeks. Constipation measurement was carried out using a Constipation Scoring System (CSS) questionnaire. Data analysis used the Paired t-test statistical test. After the yoga intervention there was a decrease in the average score of constipation (4.1 vs 3.6), the maximum value of constipation is now only 6 from the previous 8. Respondents who experienced moderate constipation were also reduced quite drastically, namely only 5 people (16.67%) remained and this difference was statistically significant (p value 0.002< 0.05). Prenatal yoga can overcome constipation in pregnant women.

Keywords: constipation; pregnant women; prenatal yoga

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INTRODUCTION

Pregnancy is a physiological condition in women that causes changes both physically and psychologically. This condition will cause discomfort which results in a decrease in the quality of pregnancy. Changes that occur in pregnant women cause physical discomfort such as back pain, tooth and gum problems, fatigue easily, difficulty sleeping, cramps, constipation, and swelling. One of the discomforts during a disturbing pregnancy is constipation (Asih, 2022). The prevalence of constipation in Indonesia is 12.9% lower than in China and South Korea (15.2% and 16.7%). From 12.9%, the prevalence of constipation in Indonesia in women is higher (15.1%) compared to men (10.7%). In pregnancy, it has been reported that 38% and 20% of women experience constipation in the second and third trimester. It has also been mentioned that in a study of 7000 pregnant women, primitive mothers were 35% less likely to suffer from constipation during pregnancy, compared to multipara mothers by 39–42% (Salari, 2024).

Constipation is a common complication of the digestive system that most women suffer from during pregnancy (Lacy BE, 2016). Constipation is defined by the presence of at least two of the following six criteria: having a bowel movement less than three times a week, hard stools, incomplete bowel emptying, difficulty bowel movements accompanied by straining, feeling of blockage in the anorectal, and trying to pass stool manually (Rao et al, 2022). Various causes are involved in the occurrence of constipation during pregnancy, such as a decrease in intestinal peristaltics due to an

increase in the hormone progesterone, the use of drugs such as magnesium sulfate to prevent premature birth (Gomes et al, 2018) and antihistamines and antiemetic drugs in pregnancy, the use of a low-fiber diet, the presence of diseases underlying conditions in pregnancy such as hypothyroidism, decreased physical activity and exercise during pregnancy, decreased movement of the vessels digestion due to increased consumption of fats and proteins to meet the nutritional needs of the fetus, decreased fluid intake due to nausea and vomiting Pregnancy, high levels of anxiety and depression in pregnant women, which leads to decreased movements of the digestive system and subsequently leads to constipation (Salari, 2024).

Constipation in pregnancy has an impact on physical, psychological, and social health, causing discomfort, negative body image perception, psychological disorders such as frustration and bad mood, lowering quality of life, and even increasing the risk of hemorrhoids. Constipation can cause severe injury to both mother and baby (Buzinskiene D, 2022). Among the severe consequences of constipation, there is an increase in the prevalence of hemorrhoids after childbirth, an increased risk of miscarriage and premature birth, an increase in the number of cesarean sections, anemia in the mother due to bleeding from hemorrhoids after painful bowel movements, the occurrence of mental disorders such as depression and anxiety, a delay in the return of normal functioning of the digestive system after childbirth (Ferdinande K, 2018), the disruption of the relationship between mother and newborn, in severe cases, intestinal obstruction and emergency surgery occur (Ghimire, P., & Maharjan, S. (2023). In addition, there is a possibility of damage to the pelvic floor muscles and pudendal nerves due to constant straining and constant attempts to defecate (Salari, 2024).

Treatment of constipation depends on the severity of the symptoms. Lifestyle modifications, such as increasing fluid intake and consuming more dietary fiber, can cope with mild cases (Liu et al, 2021). For severe cases, diagnostic and therapeutic evaluation is required. Medications, such as digestive stimulant laxatives such as lactulose or the use of glucomannan, a medicinal plant, can stimulate intestinal peristaltic movements in pregnant women (Valizadeh et al, 2025). One non-pharmacological way that can help with constipation is prenatal yoga. Yoga is an ideal way to stay fit during pregnancy because almost any yoga pose can be easily modified to suit the needs of the woman during pregnancy as well as the ability of the woman during pregnancy, yoga helps build muscle strength and body flexibility (Nurhayati, 2019). The purpose of this study is to determine the effect of prenatal yoga on the incidence of constipation on the discomfort of pregnant women.

METHOD

Research Design and Subject

This study is a pre-experiment with a pre-post test control group design research. The population in this study is all pregnant women in the Sangkrah Health Center area, Surakarta – Central Java. The sampling technique used purposive sampling, with the inclusion criteria of pregnant women in the second trimester who were willing to participate in all stages of the study and had no contraindications to do prenatal yoga or experience emergencies in both the mother and the baby. The sample of this study is 30 people.

Instruments and intervention

Yoga prenatal intervention was given to an experimental group that would follow a prenatal yoga session was conducted for 6 weeks. Constipation measurement was carried out using a Constipation Scoring System (CSS) questionnaire. The questionnaire measurements included: frequency of bowel movements, difficulty during bowel movements (*Straining*), *Incomplete evacuation*, *Abdominal pain*, Duration of bowel movements (Time needed for defecation), Frequency of unsuccessful bowel movements within 24 hours, Manual assistance (e.g. fingers, enema, etc.) and use of laxatives. The questionnaire used has gone through validity and reliability testing stages. This questionnaire has a value divided into a scale of 0 to 4. A scale of 0 indicates smooth bowel movements while a score of 4 indicates difficulty for each category. Interpretation of the data is

Interpretation: low score (0–5) = normal or mild constipation, moderate score (6–15) = moderate constipation and high score (>15) = severe constipation.

Data Analysis

The univariate analysis will display the characteristics of the respondents and the average scores. Bivariate analysis is a statistical approach that is carried out on two variables to find out if there is a relationship or correlation between. The differential test or paired T test will be used to measure the effect of the difference between the two means which is the score of the acceptability of the paired sample (one sample is measured 2 times for pre and post intervention).

RESULT

Univariate Analysis

Table 1.
Frequency Distribution Characteristics

Characteristics	Sample (Obs)	Mean	Std. Deviation	Minimum	Maximum
CSS Pretest	30	4.1	1.75	1	8
CSS PostTest	30	3.6	1.57	1	6
Age(Year)	30	27.5	3.74	20	34
Gestational Age (weeks)	30	26	3.86	20	34
Parity	30	1.6	0.72	1	3

Based on the univariate table of respondent characteristics, it can be seen that the value of the Constipation Scoring System in the post test is much smaller than the pretest. The maximum age of the respondents was 34 years old with an average age of 27 years. The minimum gestational age is 20 weeks with an average of 26 weeks. Most of the respondents were primipara and the maximum was multipara with the highest gravity of 3.

Table 2.
Frequency Distribution of CSS Before Prenatal Yoga

Constipation Score	f	%
1 (Normal)	1	3.33
2 (Normal)	4	13.33
3 (Mild constipation)	8	26.67
4 (Mild constipation)	6	20
5 (Mild constipation)	5	16.67
6 (Moderate constipation)	2	6.67
7 (Moderate constipation)	3	10
8 (Moderate constipation)	1	3.33

Before the yoga intervention was given, the results were obtained that 25 respondents experienced constipation and 5 of them were normal. The constipation that occurred was divided into two, namely mild constipation as many as 14 people (46.67%) and moderate constipation as many as 11 people (36.6%). The maximum value of the constipation score before the yoga intervention was 8. After yoga prenatal intervention there was a decrease in the constipation score, the maximum value of constipation now only reaches 6 from the previous 8. Respondents who experienced moderate constipation also decreased quite drastically, leaving only 5 people (16.67%) (see table 3).

Table 3.
Frequency Distribution of CSS After Yoga

Constipation Score	f	%
1 (Normal)	2	6.67
2 (Normal)	6	20
3 (Mild constipation)	9	30
4 (Mild constipation)	3	10
5 (Mild constipation)	5	16.67
6 (Moderate constipation)	5	16.67

Bivariate Analysis

The bivariate analysis that will be presented is the *paired T Test* . Bivariate analysis will present the difference in average of constipation score before and after prenatal yoga. The results of the analysis will be presented in table 4.

Table 4.
Uji Paired T Test

Variable	Mean	Std. Error	Std. Deviation	P- Value	95% Confidence Interval	
					Lower limit	UpperLimit
Pretest	4.1	0.32	1.75			
Posttest	3.6	0.28	1.56	0.002	0.26	0.74
Difference	0.5	0.11	0.63			

The results showed a significant difference between the constipation scores of yoga prenatal respondents. After prenatal yoga was performed, there was a decrease in the average constipation score which indicates that prenatal yoga can overcome constipation in pregnant women and this result is statistically significant (p value 0.002< 0.05).

DISCUSSION

This study shows that prenatal yoga has a positive effect on reducing constipation in pregnant women. The results of statistical tests showed that the frequency of bowel movements increased (or complaints of constipation decreased) after the yoga intervention compared to before the intervention (or compared to the control group). These findings confirm that prenatal yoga can be an effective non-pharmacological strategy in managing constipation during pregnancy. These results are in line with research by Susanti, Listya & Octaliana (2024) reporting that yoga can reduce gastrointestinal system-related pregnancy discomfort and improve bowel activity. Although there are not many RCT studies that exclusively measure constipation as the primary outcome for prenatal yoga, some studies have looked at "pregnancy discomfort" which includes constipation as one of the complaints, and found that yoga helped reduce such complaints.

Here are some biological and physiological mechanisms that may explain how prenatal yoga can reduce constipation, including: (1) Mechanical stimulation and stretching of the abdominal and pelvic muscles because certain poses in yoga (e.g., cat-cow, light twisting, hip opening movements) can massage or apply gentle pressure to the intestines, increasing intestinal motility (Chen et al, 2017). (2) Increased overall physical activity because yoga is a light-moderate form of exercise that improves circulation, mobility, and accelerates intestinal transit compared to sitting or not moving for a long time (Sahin et al, 2023). (3) Regulation of the autonomic nervous system. Yoga combines breathing, relaxation, mediation, which helps to lower stress and increase parasympathetic activity, which is important in bowel function (such as colon reflexes and defecation responses). Studies on prenatal yoga have shown decreased cortisol levels and increased immunoglobulin A (Chen et al, 2017). (4) Hormonal and metabolic changes. Pregnancy causes hormonal changes, including progesterone that slows intestinal motility. Yoga may help lower the negative effects of stress and stress hormones that exacerbate intestinal slowdown (Villar-Alises et al, 2023).

Constipation is often accompanied by tightness in the abdomen, cramps, intestinal distension, difficulty defecating, and can cause stress, anxiety, or mild depression due to prolonged discomfort. Although specific quantitative evidence is limited, many qualitative and cross-sectional studies show negative effects on pregnant women's quality of life due to constipation (Sabonyte-Balsaitiene et al, 2024). Severe constipation that is left untreated can lead to fecal impaction (a buildup of hard stools in the colon), which can interfere with bowel function and even lead to serious complications such as pressure on surrounding organs. There have been reports of cases where postpartum constipation causes uropathy obstruction (disorders of the urinary tract) due to pressure from accumulated stool (Reijonen et al, 2022). Constipation and perianal conditions such as hemorrhoids can make labor more uncomfortable, adding tension (straining) during the delivery if the condition

of the anus/perineum is disturbed. After childbirth, recovery can take longer if there is a perineal lesion or hemorrhoids irritated by constipation.

Constipation in pregnancy is also supported by biological mechanisms, including: Hormonal changes such as high progesterone cause relaxation of the intestinal smooth muscles thereby reducing intestinal motility (Hayati, 2020. Uterine growth that presses on the intestines and slows down the transit of feces. Iron supplements/other substances that cause side effects of constipation (Amanah, 2019). Low fluid and fiber intake, reduced physical activity. Straining causes an increase in intra-abdominal pressure that accelerates the occurrence of hemorrhoids, anal fissures, or anal prolapse if it is severe.

CONCLUSION

Constipation is a common problem in pregnancy that is often taken lightly, but it has a variety of potential complications ranging from physical discomfort, perianal disorders, to the possibility of affecting pregnancy outcomes and the psychological well-being of the mother. Therefore, it is important to proactively identify, prevent, and manage constipation as part of antenatal care. Prenatal yoga has been shown to lower symptoms and possible constipation.

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