## **Back Pain In The Third Trimester Of Pregnant Women Assessed** From The Level Of Stress And Physical Activity In Lambangan Village, Pagimana District

Anggrawati Wulandari<sup>1</sup>, Retno Palupi Yonni Siwi<sup>2</sup>, Putri Eka Sejati<sup>3</sup>, Epi Ardiana<sup>4</sup>

1,2,3,4 Department of Midwifery, Faculty of Nursing and Midwifery, Institut Ilmu

#### \*Email:

anggrawulandari64@gmail.com

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## **ABSTRACT**

During pregnancy, women will experience changes both anatomical, physiological and psychological, causing discomfort during pregnancy. One of the discomforts that pregnant women often experience is back pain. Back pain is pain felt in the vertebral area, mainly arising from excessive bending, lifting heavy loads, or Kesehatan STRADA Indonesia previous experiences of back pain. Back pain can be mild to severe, disrupting the activities of pregnant women. The aim of this study was to analyze the relationship between back pain in third trimester pregnant women in terms of stress levels and physical activity in Lambangan Village, Pagimana District. This research designCorrelational Analytics And Time approachCross sectional. The samples in this study were some pregnant women in the third trimesterLambangan Village, Pagimana District by a total of 30 respondents. The sampling method in this research uses the technique Accidental Sampling. Data collection using questionnaires. The results of data analysis to see the relationship between the independent variable and the dependent variable using statistical tests *Uji Spearman Rank* with a significant level of  $\alpha = 0.05$ . The research results showed that of the 30 respondents, the majority of respondents had normal stress levels, by total of 19 respondents (63.3%), half of the respondents had light physical activity, by total of 15 respondents (50.0%), half of the respondents experienced back pain. mild, by a total of 15 respondents (50.0%). Results of data analysis using statistical tests Spearman Rank obtained a P value  $< \alpha$ 0.05 (0.000 < 0.05), then H0 is rejected and H1 is accepted, which means that there is a relationship between stress levels and back pain in third trimester pregnant women and there is a relationship between physical activity with back pain in third trimester pregnant women in Lambangan Village, Pagimana District with values P value  $< \alpha 0.05$ (0.000 < 0.05). Normal stress levels and activity The mild physical condition of pregnant women can influence the occurrence of mild back pain.

> **Keywords** Back Pain, Physical Activity, Pregnant Women, Stress Level

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### INTRODUCTION

Pregnancy is a unique period in life associated with hormonal and other physiological changes in a pregnant woman, which can trigger or alter the course of neurological and psychiatric disorders. In addition, many diagnostic procedures that can be performed on normal, non-pregnant women are prohibited during pregnancy for maternal health reasons. Therapeutic decisions and management of pregnant patients with pain complaints depend largely on the balance issues that naturally occur during pregnancy, which are associated with the risks that occur in the absence of treatment versus active treatment for the mother and fetus. Various problems that arise in the second and third trimesters of pregnancy are psychological problems that pregnant women often complain about, such as anxiety and pain. Among these complaints, lower back pain is the most commonly reported, occurring in 60%-90% of pregnant women, and is one of the causes of the incidence of cesarean delivery. (Nurhayati, 2016).

Pain is a problem that often occurs in pregnancy, especially in the second and third trimesters of pregnancy. The phenomenon of pain today has become a complex problem defined by *International Society for The Study of Pain* as "Unpleasant sensory and emotional experiences resulting from tissue damage, either actual or potential". Pain causes fear and anxiety which can increase stress and drastic physiological changes during pregnancy. Pain and anxiety work synergistically, exacerbating each other. The phenomenon of pain in the back of pregnant women is one of the most frequently reported complaints among pregnant women, varying from 50% to 80%. Based on previous research in various countries, even 8% of them result in serious disability.

During pregnancy, women need time to adapt to the various changes that occur within them. The changes that occur during pregnancy generally cause discomfort and worry for most pregnant women. Changes in body size, breast shape, skin pigmentation, and overall abdominal enlargement make the pregnant woman's body look ugly and self-conscious. About 88.2% of pregnant women experience back pain. Pregnant women aged 14-22 weeks' gestation experience an incidence of lower back pain of around 62%. Back pain during pregnancy varies between 35-60%. Ariyanti's (2017) research results showed that 68% of pregnant women experienced moderate intensity back pain, and 32% of pregnant women experienced mild intensity back pain. Among all these women, 47–60% reported that back pain occurred at 5–7 months of pregnancy (Renata, 2019).

The prevalence of back pain in pregnant women is more than 50% in the United States, Canada, Iceland, Turkey, Korea and Israel. Meanwhile, this happens in non-Scandinavian countries such as Americanorthern part, Africa, the Middle East, Norway, Hong Kong and Nigeria have higher prevalence, ranging from 21% to 89.9%. Online survey conducted by the University of Ulster On In 2016, of the 157 pregnant women who filled out the questionnaire, 70% had experienced back pain (Sinclair et al, 2018). The prevalence of back pain during pregnancy in Indonesia was obtained from previous research. In total, of the 180 pregnant women studied, 47% of pregnant women experienced back pain (Suharto, 2019).

Based on the results of a preliminary study in Lambangan Village, Pagimana District. Data was obtained that out of 10 TM III pregnant women, 7 people (70%) experienced painback3 people (30%) of them did not experience back pain. Pregnant women who experience back pain are caused by:Physical Activity stress during pregnancy such as standing for too long, lifting objects, etcApart from that the level of stress during pregnancy is a psychological burden that causes painful physical tension, most commonly occurring in the soft tissue in the neck, upper shoulders and shoulder blades, back and lower back. buttocks, this results in pregnant women experiencing back pain which can be bothersome in daily activities.

The changes that cause back pain are caused by Physical Activity causing the weight of the uterus to enlarge, bend too much, walking without rest, and lifting weights. Symptoms

of back pain are also caused by the hormones estrogen and progesterone which relax joints, bones and muscles in the hip (Tiran, 2018). Apart from that, the risk factor for back pain is the level of stress (psychology). Although body posture can make the pain worse, the psychological burden, in this case emotional stress, can cause painful physical tension, most commonly occurring in the soft tissue in the neck, upper part of the shoulders, and shoulder blades, back and buttocks. Stress is defined as a physical or psychological event that is perceived as a potential threat to physical or health emotional. The stress and tension that arises can come from various things, for example from family conflict, stress or pressure at work at home or perhaps reality that does not match expectations.

Efforts to reduce back pain usually use pharmacological and non-pharmacological therapy, pharmacological therapy is possible given with an agent anti-inflammatory non-steroidal, analgesic, muscle relaxant. For non-pharmacological therapy by providing relaxation, imagination, cold or warm compresses. Interventions given to mothers who experience back pain include: Physical therapy, acupuncture, chiropractic manipulation, or medications that may help

Based on the description above, researchers are interested in taking the title Back pain in third trimester pregnant women in terms of stress levels and physical activity in Lambangan Village, Pagimana District.

### **METHODS**

This research uses a correlational analytical design and a cross-sectional time approach. The sample in this study was 30 respondents from the third trimester of pregnancy in Lambangan Village, Pagimana District. The sampling method in this research uses the technique Accidental Sampling. Data collection using questionnaires. The results of data analysis to see the relationship between the independent variable and the dependent variable used the Spearman Rank statistical test with a significance level of  $\alpha=0.05$ . This research also went through the stage of passing the ethical test.

#### **RESULT**

## A. Umum Date

## 1. Characteristics of Respondents Based on Age

Table 4.1

Frequency distribution of respondents based on maternal age in Lambangan Village, Pagimana District

No	Age	Frequency	Percentage (%)	
1	<20 years	4	13,3	
2	20-30 years	20	66,7	
3	>30 years	6	20,0	
	Total	Total	30	

The research results showed that the majority of respondents were aged 20-30 years, of 20 respondents (66.7%).

## 2. Characteristics of Respondents Based on Education

Table 4.2

Frequency distribution of respondents based on education in Lambangan Village,

Pagimana District

No	Education	Frequency	Percentage (%)	
1	Elementary School	6	20,0	
2	Junior High School	5	16,7	
3	Senior High School	15	50,0	
4	University	4	13,3	
	Total	Total	30	

The research results showed that half of the respondents had a high school education, by total of 15 respondents (16.7%).

## 3. Characteristics of Respondents Based on Occupation

Table 4.3

Frequency distribution of respondents based on occupation in Lambangan Village,

Pagimana District

No	Work	Frequency	Percentage (%)
1	Not Working (IRT)	21	70,0
2	Private	5	16,7
3	Self-employed	0	0
4	civil servants	4	13,3
	Total	Total	30

The research results showed that the majority of respondents did not work (IRT), by a total of 21 respondents (70.0%).

## 4. Characteristics of Respondents Based on Occupation

Table 4.4

Frequency distribution of respondents based on parity in Lambangan Village, Pagimana District

No	Parity	Frequency	Percentage (%)
1	Primipara	10	3,3
3	Multipara	19	63,4
4	Grandemulti	1	3,3
	Total	30	100

The research results showed that the majority of parities were Multipara, as many as 19 respondents (63.4%).

## C. Special Data

### 1. Stress Level

Table 4.2

Frequency distribution of respondents based on stress levels in Lambangan Village,

Pagimana District

No	Stress level	Frequency	Percentage (%)
1	Normal	19	63,3
2	Light	9	30,0
3	Moderate	2	6,7
4	Heavy	0	0
5	Very heavy	0	0
	Total	30	100

Based on table 4.2, it was found that the majority of respondents had normal stress levels, by a total of 19 respondents (63.3%).

## **B.** Physical Activity

Table 4.3

Frequency distribution of respondents based on physical activity in Lambangan

Village, Pagimana District

No	Activity Physique	Frequency	Percentage (%)
1	Light	15	50,0
2	Moderate	13	43,3
3	Heavy	2	6,7
	Total	30	100

Based on table 4.3, it was found that half of the respondents had light physical activity, out of a total of 15 respondents (50.0%).

## C. Back pain in third trimester pregnant women

Table 4.4

Frequency distribution of respondents based on back pain of TM III pregnant women

in Lambangan Village, Pagimana District

No	Back Pain	Frequency	Percentage (%)
1	No Pain	0	0
2	Mild Pain	15	50,0
3	Moderate Pain	13	43,3
4	Severe Pain	2	6,7
5	Very Severe Pain	0	0
	Total	30	100

Based on table 4.4, it was found that half of the respondents experienced mild back pain, as many as 15 respondents (50.0%).

## D. Relationship between stress levels and back pain in third trimester pregnant women

Table 4.5

Cross-tabulation of the relationship between stress levels and back pain in third trimester pregnant women in Lambangan Village, Pagimana District

Back Pain in Pregnant Women in Third Trimester												
Stress level				_							To	otal
	No I	Pain	L	ight	Mo	derate	Н	eavy	Ve	ery		
									hea	avy	-	
	N	%	N	%	N	%	N	%	N	%	N	%
Normal	0	0	15	78,9	4	21,1	0	0	0	0	19	100
Light	0	0	0	0	9	100	0	0	0	0	9	100
Moderate	0	0	0	0	0	0	2	100	0	0	2	100
Heavy	0	0	0	0	0	0	0	0	0	0	0	0
Very heavy	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	15	50,0	13	43,3	2	6,7	0	0	30	100

Based on table 4.5, it was found that of the 30 respondents, the majority of respondents had normal stress levels and 15 respondents (78.9%) experienced mild back pain.

# E. Relationship between physical activity and back pain in third trimester pregnant women

Table 4.6

Cross-tabulation of the relationship between physical activity and back pain in third trimester pregnant women in Lambangan Village, Pagimana District

		Ва	ack Pa	in in Pre	gnant V	Women in	Thire	d Trime	ster		T	otal
Activity Physique -	No I	Pain	L	ight	Mo	derate	Н	eavy	Very	heavy	_	
<del>_</del>	N	%	N	%	N	%	N	%	N	%	N	%
Light	0	0	12	80,0	3	20,0	0	0	0	0	15	100
Moderate	0	0	3	23,1	10	76,9	0	0	0	0	13	100
Heavy	0	0	0	0	0	0	2	100	0	0	2	100
Total	0	0	15	50,0	13	43,3	2	6,7	0	0	30	100

Based on table 4.6, it is found that almost all of the 30 respondents have activity. 12 respondents (80.0%) had mild physical problems and experienced mild back pain.

### 3. Statistical Test Results

Table 4.7

Results of statistical tests on the relationship between stress levels and back pain in third trimester pregnant women in Lambangan Village, Pagimana District

		Correlations		-
			Stress	Back Pain
Spearman's rho	Stress	Correlation Coefficient	1.000	.803
		Say. (2-tailed) N	30	.000 30
	Back Pain	Correlation Coefficient	.803	1.000
		Say. (2-tailed) N	.000 30	30

Based on data analysis using statistical tests Spearman Rank value is obtained P value  $< \alpha~0.05~(0.000 < 0.05)$  marks  $H_0$  rejected and  $H_1$  accepted, which means there is a relationship between stress levels and back pain in third trimester pregnant women in Lambangan Village, Pagimana District.

Apart from that, the results of data analysis using Spearman's rank Also obtained was an r value of 0.803, which means that there is a very strong relationship between stress levels and back pain in third trimester pregnant women in Lambangan Village, Pagimana District, because it is between 0.71 - 0.90. The relationship that occurs shows a positive direction (+) because the correlation coefficient value is close to +1 (positive one), which means that the heavier the stress level of the pregnant mother, the more severe the back pain felt by the pregnant mother.

Table 4.8
Results of statistical tests on the relationship between physical activity and back pain in third trimester pregnant women in Lambangan Village, Pagimana District

Correlations						
			Physical_Activi	Back Pain		
			ty			
Spearman's rho	Physical_Activity	Correlation Coefficient	1.000	.671**		
		Say. (2-tailed)		.000		
		N	30	30		
	Back Pain	Correlation Coefficient	.671**	1.000		
		Say. (2-tailed)	.000			
		N	30	30		
**. Correlation is	significant at the 0.01 le	evel (2-tailed).				

Based on data analysis using statistical tests Spearman Rank value is obtained P value  $< \alpha~0.05~(0.000 < 0.05)$  marks  $H_0$  rejected and  $H_1$  accepted, which means there is a relationship between physical activity and back pain in third trimester pregnant women in Lambangan Village, Pagimana District.

Apart from that, the results of data analysis using *Spearman's rank* also obtained an r value of 0.671 which means there is a strong relationship between Physical Activity with back pain in third trimester pregnant women in Lambangan Village, Pagimana District, because it is between 0.41-0.70. The relationship that occurs shows a positive direction (+) because the correlation coefficient value is close to +1 (positive one), which means it is getting worse. The physical condition of pregnant women, the more severe the back pain felt by pregnant women.

### **DISCUSSION**

#### A. Stress Level

Based on table 4.2 above, it was found that of the 30 respondents, the majority of respondents had normal stress levels, by total of 19 respondents (63.3%), while those who had mild stress levels were 9 respondents (30.0%) and those who had low stress levels were while there were 2 respondents (6.7%)

Stress is a condition or state of the body that is disturbed due to psychological pressure and usually stress is associated with psychological illness. However, it is more because a person's mental problems then result in physical illness which can arise due to weakness and low body resistance in stressful conditions (Mumpuni, Y, & Wulandari, A, 2016).

According to the researchers' assumption that some have normal stress levels, this is because respondents have good knowledge of how to manage stress during pregnancy, this canis known that the majority had a high school education. According to researchers at a high level education, and improving thought patterns respondents will influence perception how to deal with stress and ways overcome it. Meanwhile, people who are less educated are slower in absorbing information obtained besides that Most respondents already have experience from previous pregnancies, most respondents are multiparous mothers so they have good preparation to deal with stress during pregnancy, respondents already know what to do to avoid stress. Good mental preparedness can influence a mother's psychological condition for the better, where the stress level of pregnant women is reduced.

## B. **Activity Physique**

Based on table 4.3 above, it was found that of the 30 respondents, half of the respondents had light physical activity, by a total of 15 respondents (50.0%) while 13 respondents (43.3%) had moderate activity and 2 respondents (6.7%) had heavy activity.

Physical activity is any body movement produced by skeletal muscles that requires energy expenditure. Absent physical activity (lack of physical activity) is an independent risk factor for chronic disease, and overall is thought to cause mortality globally (*World Health Organization*, 2016).

Physical activity can be grouped into three groups, as many as: 1. Light (type of activity 25% of time spent sitting or standing, 75% for standing or moving) or PAL value 1.40 - 1.69, 2. Moderate (type of activity 40 % of time spent sitting or standing, 60% for standing or moving) or PAL value 1.70 - 1.99 Heavy (type of activity 75% of time spent sitting or standing, 25% for standing or moving) or PAL value 2,00 - 2.40)

According to researchers' assumptions, some pregnant women have light physical activity, this is because mothers do not work more (IRT), some pregnant women do physical activities such as sweeping, washing dishes, sitting, walking, watching TV, sleeping, etc., whereas mother who have activity being used more for exercising, shopping, swimming, cycling, and other activities in cleaning the house such as mopping, while respondents who have activity heavy, by total of the activities carried out by pregnant women including housework accompanied by work that requires a lot of energy and over a long period of time, for example pregnant women who apart from working as housewives with the burden of daily housework, pregnant women also have work loads outside of being workers. factory.

## C. Back pain in third trimester pregnant women

Based on table 4.4 above, it was found that of the 30 respondents, half of the respondents experienced mild back pain, out of a total of 15 respondents (50.0%). Meanwhile, 13 respondents (43.3%) experienced moderate back pain and 2 respondents (6.7%) experienced severe back pain.

This is in line with research from Kurniawati (2019) which said that of 30 respondents, 20% of respondents experienced mild pain, 50% experienced moderate pain and 30% experienced severe pain accompanied by accompanying symptoms.

Back pain is pain in the lumbar, lumbosacral, or in the area of the neck. Back pain is caused by muscle tension or pressure on nerve roots and is usually felt as pain, tension, or stiffness in the back (Huldani, 2016). Pregnant women will usually complain of back pain, especially the lower back. Back pain in pregnant women is caused by pressure from the enlarging uterus, which causes a lot of discomfort causing pain in the lower back, buttocks and legs (Murkoff, Eisenberg & Hathaway, 2016).

According to researchers' assumptions, mothers experience mild back pain because the mother does not do activities that require a lot of energy. Mild pain is if the pain comes suddenly, moderate pain if the pain comes and feels achy, while severe pain is if the pain comes in a hissing manner. , hard to move until groaning in pain. If back pain is not treated properly, it can cause the pregnant woman's quality of life to worsen. This issue will continue in forminjury recur or appear continuously in worse condition according to the course of the pregnancy

## D. Relationship between stress level and back pain in third trimester pregnant women

The research results showed that of the 30 respondents, the majority of respondents had normal stress levels and experienced mild back pain as many as 15 respondents (78.9%). Based on data analysis using statistical tests *Spearman Rank* value is obtained *P* value <  $\alpha$  0.05 (0.000 < 0.05) marks H<sub>0</sub> rejected and H<sub>1</sub> accepted, which means there is a relationship between stress levels and back pain in third trimester pregnant women in Lambangan Village, Pagimana District.

Apart from that, the results of data analysis using *Spearman's rank* Also obtained was an r value of 0.803, which means that there is a very strong relationship between stress levels and back pain in third trimester pregnant women in Lambangan Village, Pagimana District, because it is between 0.71 - 0.90. The relationship that occurs shows a positive direction (+) because the correlation coefficient value is close to +1 (positive one), which means that the heavier the stress level of the pregnant mother, the more severe the back pain felt by the pregnant mother.

The results of this research are in line with research by Arumsari (2016) which states that There is a significant relationship between stress and changes in the intensity of low back pain with a p value of 0.004. The higher the stress then The higher the incidence of low back pain, conversely the lower the stress, the greater the incidence of lower back pain.

According to the researchers' assumption that the majority of respondents have normal stress levels and experience mild back pain, this is more due to the respondents' good level of knowledge and experience of pregnancy.previously, pregnant women have been looking for information regarding what efforts should be taken to prevent back pain caused because of stress, apart from that, multiparous pregnant women already have experience in pregnancy so the mother will be calmer.

# E. Relationship between physical activity and back pain in third trimester pregnant women

The research results showed that from 30 respondents it was found that most of the 30 respondents had activity 12 respondents (80.0%) had mild physical problems and experienced mild back pain. Based on data analysis using statistical tests *Spearman Rank* obtained a P value  $< \alpha~0.05~(0.000 < 0.05)$ , so H0 is rejected and H1 is accepted, which means there is a relationship between physical activity and back pain in pregnant women in the third trimester, Lambangan Village, Pagimana District.

Apart from that, the results of data analysis using *Spearman's rank* also obtained an r value of 0.671 which means there is a strong relationship between Physical Activity with back pain in third trimester pregnant women in Lambangan Village, Pagimana District, because it is between 0.41 - 0.70. The relationship that occurs shows a positive direction (+) because the correlation coefficient value is close to +1 (positive one), which means it is getting heavier activity The physical condition of pregnant women, the more severe the back pain felt by pregnant women.

The results of this research are in line with research from St. Arah (2020) who said that from data analysis it was found that the P value was  $< \alpha \ 0.05 \ (0.000 < 0.05)$ which means there is a relationship between physical activity and back pain in third trimester pregnant women at the Karang Mulya Community Health Center, Nabire Regency.

Back pain is pain felt in the lower back which originates from the spinal area (lower back), muscles, nerves or structure other around that area. This pain is felt between the corners of the lowest ribs in the folds of the lower buttocks, as much as in the lumbar area and is commonly accompanied with the course of pain in the legs and feet (Andarmoyo, 2016). Back pain is a disorder experienced by many pregnant women which does not only occur in certain trimesters, but can occur throughout pregnancy (Fraser, 2016).

According to researchers' assumptions, there is a relationship between physical activity and back pain in pregnant women in the third trimester. Back pain experienced by pregnant women in the third trimester is because pregnant women do a lot of activities, when pregnant women have to take care of the household, and don't get enough rest. This is in line with research by Kovac, Emma and Ana et al (2016) which states that several previous studies found a relationship between work and heavy physical activity and high risk incidence of back pain during pregnancy. This research combines various types of daily physical activities such as; work activities, activities at home, free time or rest, and time for exercise. Meanwhile, respondents didPhysical Activity light and experienced painful moderate back, this is because the respondent did activity Mild physical activity over a long period of time can cause moderate back pain in pregnant women. Back pain is caused by excessive bending, walking without rest, and lifting weights, especially if one or all of these activities are done when you are tired. These activities increase stretching of the back. The problem can worsen if the pregnant woman's

abdominal muscles are weak and fail to support the enlarged uterus. Without support, the uterus will sag, a condition that will make the curve of the back longer, causing back pain.

Therefore, health workers, especially midwives, are expected to be able to provide information to third trimester pregnant women about the factors that influence back pain in pregnant women, so that pregnant women can avoid it. Apart from that, it is recommended to use cold or warm compresses to treat back pain as well Limit physical activity if you feel moderate or severe back pain.

### **CONCLUSION**

The conclusion in this research is the majority of respondents had normal levels of stress, by total of 19 respondents (63.3%), half of the respondents had light physical activity, by total of 15 respondents (50.0%), half of the respondents experienced mild back pain, as many as 15 respondents (50,0%). There is a relationship between stress levels and back pain in third trimester pregnant women in Lambangan Village, Pagimana District with a P value <  $\alpha$  0.05 (0.000 < 0.05). There's a relationshipPhysical Activity pain with back pain in third trimester pregnant women in Lambangan Village, Pagimana District with a P value <  $\alpha$  0.05 (0.000 < 0.05). It is recommended as input for research sites to provide education to pregnant women about the factors that influence back pain in pregnant women so that pregnant women can avoid back pain.

## **REFERENCES**

- Adnan, S. (2016) Hubungan Antara Sikap Tubuh Saat Bekerja Dengan Nyeri Punggung Bawah Pada Perajin Plat Logam Di Citerep Kab.Bogor (Skripsi) UI Jakarta
- Ai Yeyeh, Rukiyah dkk. (2017) *Asuhan Kebidanan I ( Kehamilan )*. Cetakan Pertama. Jakarta: Trans Info Media
- Andarmoyo, Sulistyo, dan Suharti. (2016). *Persalinan Tanpa Nyeri Berlebihan*. Jogjakarta : Ar-Ruzz Media.
- Anshari, (2016). Nyeri Punggung Bawah, Dalam :Anatomi dan Fisiologi NPB, PERDOSSI,pp:5-15
- Devi M, Sulaiman, Rosnani, (2016) Jawiah. *Pengaruh Yoga Antenatal Terhadap Pengurangan Keluhan Ibu Hamil Trimester III*. Jurnal kedokteran dan kesehatan, volume 1, no. 1, Oktober;47-53
- Friedman. 2016. Keperawatan Keluarga. Yogyakarta: Gosyen Publishing
- Hidayat A, Aziz Alimul. (2016). *Metode Penelitian Kebidanan dan Teknik Analisa*. Salemba Medika. Jakarta
- Indriyani, Diyan. (2016). Aplikasi dan Teori Konsep Keperawatan Maternitas dengan kematian Janin. Yogyakarta: Ruzz Media
- Kementerian Kesehatan RI. (2020). Profil Kesehatan Indonesia. Jakarta
- Kuswanti, Ina. (2016). Asuhan Kehamilan. Pustaka Pelajar. Yogyakarta
- Notoadmojo, Soekidjo. (2016). Promosi Kesehatan dan Ilmu Perilaku, Rineka Cipta. Jakarta
- Notoatmodjo, Soekidjo, (2016). Metode Penelitian Kesehatan. Jakarta: Rineka Cipta.
- Nursalam, (2016). Konsep Dan Penerapan Metodologi Penelitian Ilmu Keperawatan. Jakarta: Salemba.
- Prawirohardjo, Sarwono. (2016). *Asuhan Maternal Dan Neonatal*. Jakarta : Yayasan Bina Pustaka

Prawirohardjo, Sarwono. (2016). Ilmu Kebidanan. Yogjakarta: Yayasan Bina Pustaka.

Sugiyono, (2016). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif,* R&D. Bandung.

Wiknjosastro, Hanifa. (2016). Ilmu Kebidanan. Jakarta: YBP-SP.

Yulifah, dkk, (2016). Konsep Kebidanan. Jakarta: Salemba Medika

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