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ORIGINAL RESEARCH

DETERMINANTS OF INTRAUTERINE GROWTH RESTRICTION (IUGR) IN LABOURING MOTHERS AT REGIONAL GENERAL HOSPITAL IN KARAWANG, WEST JAVA

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ABSTRACT	Keywords
Introduction: Intrauterine Growth Restriction (IUGR) is a problem that continues to be challenging in the care of mothers and newborns. IUGR causes the baby's growth process to be stunted, and the baby is born with health problems. Many factors influence the incidence of IUGR, both modifiable and irreversible factors. This study aimed to determine the determinant factors for the incidence of IUGR in labouring mothers at the Karawang Regional General Hospital, West Java. **Method**: The research design used correlation analysis with a cross-sectional approach. The population in this study were labouring mothers at Karawang Hospital. The sampling technique used systematic random sampling. Bivariate analysis used the Chi-Square test. **Results:** The results showed that most of the prevalence of IUGR in labouring mothers was 68.8%. The results of the bivariate analysis showed that there was a significant relationship to the incidence of IUGR in labouring mothers, including age (p-value = 0.016; α <0.05), parity (p-value = 0.028; α <0.05), hypertension (p-value = 0.044; α <0.05), preeclampsia (p-value = 0.048; α <0.05), nutritional status (p-value = 0.026; α <0.05); anemia (p-value = 0.029; α <0.05); Gemelli pregnancy (p-value = 0.028; α <0.05). There was no significant relationship between history of heart disease and IUGR (p-value = 0.532; α <0.05). **Conclusion.** IUGR is a condition that causes fetal growth to be stunted. Several factors that affect IUGR include the age of the pregnancy, parity (multipara or grand multipara), hypertension as a comorbidity, preeclampsia, nutritional status of pregnancy, anemia during pregnancy, and multiple pregnancies. Some of these risk factors can be modified and prevented by pregnant women by carrying out routine checks.	*Intrauterine Growth Restriction, IUGR, Labouring Mothers*

INTRODUCTION

Intrauterine Growth Restriction (IUGR) is a significant global public health problem and a major cause of infant mortality and morbidity. IUGR is one of the causes of death in children and perinatal, with the incidence varying between 3-10%. The perinatal mortality rate for infants with IUGR is approximately 7-8 times higher than normal infants, and around 26% of infants are stillborn with IUGR (Suryanti et al., 2020). BKKBN (2017) that the incidence of IUGR in Indonesia is 4.4% of all live births. Most children with LBW associated with IUGR were found in the provinces of Papua at 27%, East Nusa Tenggara at 20.3%, and South Sumatra at 19.5%. Indonesia's health profile (2021), it is reported that most infants are born with LBW 81.8%, and the prevalence of LBW infants caused by IUGR is 3.1%. The majority of IUGR in Karawang

Hospital in 2021 is 9.1%, and in 2022 it is 11%.

IUGR results from the interaction of various factors through a process that occurs in the pregnancy. According to The American College of Obstetricians and Gynecologists (ACOG), IUGR describes a fetus with an estimated weight below the 10th percentile for a certain gestational age (Sharma et al., 2016). The risk factors for IUGR are a young pregnant mother's age, primigravida status, low gestational weight gain, and history of abortion. Hypertension in pregnancy, abnormal uteroplacental vasculature, congenital abnormalities, infections, or substance abuse by pregnant women have been reported to be associated with the incidence of IUGR. In pregnancies with IUGR, termination is performed by ultrasound examination. Infants with IUGR are at risk for complications, such as preterm delivery, hypoglycemia, hypocalcemia, and thermoregulation disorders. Therefore, neonatal resuscitation and handling complications during labor must be done quickly and precisely (Kesavan & Devaskar, 2019).

The placenta plays an essential role in the occurrence of IUGR. The abnormal formation, inadequate perfusion, and dysfunction of the placental villi are among the leading causes of IUGR, especially in early gestation. The pathophysiology of IUGR is not known with certainty because fetal growth is a complex process involving many factors. Several factors that are thought to cause IUGR are abnormal placental function, inadequate maternal supply of oxygen and nutrition, and decreased ability to use supplies by the fetus (Sharma et al., 2016). Other causes of IUGR, including the history of diseases experienced by the mother, such as hypertension, preeclampsia, anemia, chronic energy deficiency, and maternal nutrition, have a strong influence (Zamecznik et al., 2014).

IUGR's prognosis impacts preterm delivery, perinatal asphyxia, thermoregulation disorders, and impaired immune function (Sharma et al., 2016). The long-term impact that will arise is cardiovascular diseases (CVD). This risk will increase if, in childhood, there is rapid weight gain or obesity. The physiological concept of relating intrauterine life processes to the consequences of later disease is known today as fetal programming. This concept was developed from the Fetal Origin Of Adult Disease (FOAD) hypothesis by Barker, or the Barker Hypothesis, a disease in adults that has been programmed since childhood (Malhotra et al., 2014).

Hospital efforts and the role of midwives are significant for the problem of IUGR. Preventive is the leading service in addition to promotive services that can be carried out in the midwifery realm, such as during Antenatal Care (ANC), carrying out routine ANC examinations that have been scheduled for at least six times during pregnancy, doing the ultrasound, examinations by doctors, counseling for nutrition during a healthy and nutritious pregnancy, accurate and periodic examination of the height of the uterine fundus during ANC visits is a way of early detection of the possibility of IUGR and other pregnancy problems. One of the midwives' authority in examinations during ANC is 12T, one of which is the TFU examination (RI, 2021). Based on the description above, the problem of intrauterine growth restriction (IUGR) is still relatively high and occurs globally and nationally. This study aimed to determine the determinant factors for the incidence of IUGR in labouring mothers at Karawang Hospital, West Java.

METHOD

The research design used correlation analysis with a cross-sectional approach. The population in this study were labouring mothers at Karawang Hospital. The sampling technique used systematic random sampling. Bivariate analysis used the Chi-Square test.

RESULTS
ANALYSIS UNIVARIATE

Table 1 The Frequency Distribution based on IUGR, Age, Parity, Hypertension, Preeclampsia, Nutritional Status, History of Heart Disease, Anemia, and Gemelli Pregnancies

Variable		n	%
IUGR	Yes	72	68.6
	No	33	31.4
Age	High Risk (<20 years or >35 years	37	35.2
	Not at risk (20-35 years)	68	64.8
Parity	Multipara or Grand Multipara	70	66.7
	Primipara	35	33.3
Hypertension	Yes	34	32.6
	No	71	67.6
Preeclampsia	Yes	38	36.2
	No	67	63.8
Nutritional Status	Normal	36	34.1
	Chronic Energy Deficiency	69	65.9
History of Heart Disease	Yes	59	56.2
	No	46	43.8
Anemia	Yes	39	37.1
	No	66	62.9
Gemelli Pregnancy	Yes	54	51.4
	No	51	48.6

The results based on Table 1 showed that most of the respondent's mothers experienced IUGR was 27 respondents (68.8%), most of the age respondents did not have high risk as many as 68 respondents (64.8%), the prevalence of respondents with multipara or grand multipara parity was 70 respondents (66.7%)), the prevalence of respondents who did not have hypertension was 71 respondents (67.6%), the majority of respondents who did not have preeclampsia was 67 respondents (63.8%), the prevalence of nutritional status of respondents with chronic energy deficiency was 69 respondents (65.9%), the majority of respondents who had a history of heart disease was 59 respondents (56.2%), the prevalence of respondents who did not have anemia was 66 respondents (62.9%), and the majority of respondents with Gemelli pregnancy was 54 respondents (51.4%).

Table 2 Bivariate Analysis

Variable		IUGR Yes n	Yes %	No n	No %	P-value	OR (95% CI)
Age	High Risk (<20 years or >35 years	31	43.0	6	18.2		
	Not at risk (20-35 years)	41	57.0	27	81.8	0.016*	3.4 (1.3-9.3)
Total		72	68.6	33	31.4		
Parity	Multipara or Grand Multipara	43	59.7	27	81.8		
	Primipara	29	40.3	6	18.2	0.028*	3.0 (1.1-8.3)
Total		72	68.6	33	31.4		
Hypertension	Yes	28	38.9	6	18.2		2.9 (1.0-7.8)
	No	44	61.1	27	81.8	0.044*	
Total		72	68.6	33	31.4		
Preeclampsia	Yes	31	43.0	7	21.2		2.8 (1.1-7.3)
	No	41	57.0	26	78.8	0.048*	
Total		72	68.6	33	31.4		
Nutritional Status	Normal	42	58.3	27	81.8		
	Chronic Energy Deficiency	30	41.7	6	18.2	0.026*	3.2 (1.2-8.7)
Total		72	68.6	33	31.4		
History of Heart Disease	Yes	42	58.3	17	51.5		
	No	30	41.7	16	48.5	0.532	-
Total		72	68.6	33	31.4		
Anemia	Yes	32	44.4	7	21.2		2.9 (1.1-7.7)
	No	40	55.6	26	78.8	0.029*	
Total		72	68.6	33	31.4		
Gemelli Pregnancy	Yes	29	40.3	6	18.2		3.0 (1.1-8.3)
	No	43	59.7	27	81.8	0.028*	
Total		72	68.6	33	31.4		

*Significant at p-*value* <0.05

Bivariate Analysis
Age with Incidence of IUGR
The analysis showed a significant relationship between age and the incidence of IUGR (p-value = 0.016; OR 3.4; 95% CI: 1.3-9.3). Not at-risk (20-35 years old) labouring mothers had a 3.4 times chance of experiencing IUGR than those at risk.

Parity with Incidence of IUGR
The analysis showed a significant relationship between parity and the incidence of IUGR (p-value = 0.028; α <0.05; OR 3.0; 95% CI: 1.1-8.3). The labouring mothers with multiparas or grand multiparas were at risk of experiencing IUGR 3.0 times compared to primiparas.

Hypertension with Incidence of IUGR

The analysis showed a significant relationship between hypertension and the incidence of IUGR (p-value = 0.044; α <0.05; OR 2.9; 95% CI: 1.0-7.8). The labouring mothers who did not have hypertension were at risk of 3.0 times experiencing IUGR than mothers with hypertension.

Preeclampsia with Incidence of IUGR

The analysis showed a significant relationship between preeclampsia and the incidence of IUGR (p-value = 0.048; α <0.05; OR 2.8; 95% CI: 1.1-7.3). The labouring mothers who did not have preeclampsia were at risk of 3.8 times experiencing IUGR than mothers with eclampsia.

Nutritional Status with Incidence of IUGR

The analysis showed a significant relationship between nutritional status and the incidence of IUGR (p-value = 0.026; α <0.05; OR 3.2; 95% CI: 1.2-8.7). The labouring mothers with normal nutritional status were at risk of 3.2 times experiencing IUGR than mothers with chronic energy deficiency.

History of Heart Disease with Incidence of IUGR

The analysis showed no significant relationship between the history of heart disease and the incidence of IUGR (p-value = 0.532; α <0.05).

Anaemia with Incidence of IUGR

The analysis showed a significant relationship between anemia and the incidence of IUGR (p-value = 0.029; α <0.05; OR 2.9; 95% CI: 1.1-7.7). The labouring mothers who did not have anemia were at risk of 2.9 times experiencing IUGR than mothers with anemia.

Gemelli Pregnancy with Incidence of IUGR

The analysis showed a significant relationship between Gemelli pregnancy and the incidence of IUGR (p-value = 0.028; α <0.05; OR 3.0; 95% CI: 1.1-8.3). The labouring mothers who did not have Gemelli pregnancy were at risk 3.0 times experiencing IUGR than mothers with Gemelli mothers.

DISCUSSION

Intrauterine Growth Restriction

Based on the study's results, most labouring mothers experienced an IUGR of 68.6%. The study is in line with the research of Suryanti et al (2020), most labouring mothers experience an IUGR of 65%. This research is reinforced by Irwantoro et al. (2021), the prevalence of IUGR in pregnant women is 76,16%. Researchers assume that IUGR is a condition in which the fetus fails to reach its growth potential, characterized by an estimated weight less than the 10th percentile for gestational age. Risk factors need to be identified to assist in the antenatal diagnosis of IUGR and increase the mother's knowledge by explaining the risk factors involved so that they can be avoided to minimize the occurrence of IUGR (Kurniasari & Arifandini, 2019).

Factors Associated between Age and the Incidence of IUGR

The research results showed a significant relationship between age and the incidence of IUGR. The prevalence of IUGR based on age is mostly in non-risk birth mothers (20-35 years) of 50.7%. The incidence of IUGR with reproductive age is still a lot that is stunted fetal growth could be caused by other factors such as maternal disease. In general, mothers with morbidities, including cardiovascular disease, metabolic disease, and infections, have a greater risk of having an infant with IUGR (Irwantoro et al., 2021; Prawiroharrdjo, 2021).

Factors Associated between Parity and the Incidence of IUGR

The results showed a significant relationship between parity and the incidence of IUGR. The prevalence of IUGR events based on parity is mostly in multipara or grand multipara births at 59.7%. Parity is the condition of a mother who gives birth to more than one fetus. Mothers with parity >3 are at risk of

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experiencing IUGR compared to mothers with parity 1-3. Mothers with multiparas can experience disorders or abnormalities in the placenta, including placental insufficiency, which can increase the risk of IUGR. Multipara parity or grandemultipara have a risk of IUGR. The more often mothers give birth, the more disorders or irregularities in the placenta will occur (Kurniasari & Arifandini, 2019; Tesfa et al., 2020).

Factors Associated between Hypertension and the Incidence of IUGR

The results showed a significant relationship between hypertension and the incidence of IUGR. This is in line with the research of Irwantoro et al (2021), there is an essential relationship between hypertension and IUGR (p-value = 0.000; α <0.05). Hypertension is one of the comorbidities in pregnant women. The condition of the blood vessels during pregnancy causes spasms of the blood vessels, and in some cases, there is a narrowing of the lumen of the arterioles, which can inhibit the growth of the fetus. Hypertension during pregnancy can cause impaired blood flow to the placenta so that nutrients from mother to fetus are reduced. Chronic and Gestational Hypertension in pregnancy affects fetal growth, both of which are the cause of stunted fetal development or the incidence of IUGR (Kamilah & Ningrum, 2020).

Factors Associated between Preeclampsia and the Incidence of IUGR

The results showed a significant relationship between preeclampsia and the incidence of IUGR. This is in line with the research of Irwantoro et al (2021), there is a significant relationship between preeclampsia and IUGR (p-value = 0.000; α <0.05). Preeclampsia is one of the causes of IUGR. In preeclampsia, there is a spasm of the decidual spiral arterioles, which causes decreased blood flow to the placenta. Reduced blood flow to the placenta will result in impaired placenta function in the form of placental hypoxia.

Preeclampsia is a pregnancy-specific syndrome in the form of reduced organ perfusion due to vasospasm and endothelial activity. Proteinuria is an essential sign of preeclampsia (Tesfa et al., 2020).

Factors Associated between Nutritional Status and the Incidence of IUGR

The results showed a significant relationship between nutritional status and the incidence of IUGR. This is in line with the research of Suryanti et al (2020), there is a significant relationship between preeclampsia and IUGR (p-value = 0.000; α <0.05). A low body mass index of pregnant women tends not to fulfill adequate nutritional needs for fetal growth, which will impact the baby's birth weight. Pregnant women with average or low body weight and lack of weight gain during pregnancy can cause stunted fetal growth. Lack of weight gain in the second trimester strongly correlates with decreased birth weight. Poor nutritional status in pregnant women will cause the risk of IUGR in their fetuses to be 2-3 times greater than mothers who have good nutritional status (Astuti et al., 2020; Cetin et al., 2013; Tesfa et al., 2020).

Factors Associated between History of Heart Disease and the Incidence of IUGR

The results showed no significant relationship between a history of heart disease and the incidence of IUGR. This is not in line with the research of Suryanti et al (2020), there is a significant relationship between heart disease and IUGR (p-value = 0.003; α <0.05). Cardiovascular disease can disrupt the uteroplacental flow, so the fetus's needs cannot be adequately met. Besides, with an infection, the metabolic needs of the mother will increase so that the mother's body cannot meet the metabolic needs of the fetus. If these two processes last long, they can trigger IUGR (Crispi et al., 2018).

Factors Associated between Anaemia and the Incidence of IUGR

The results showed a significant relationship between anemia and the incidence of IUGR. This is in line with the research of Suryanti et al (2020), where there is a significant relationship between anemia and IUGR (p-value = 0.000; α <0.05). Anemia during pregnancy can affect both the mother and the fetus. The fetus can experience intrauterine growth disorders or IUGR, increasing the risk of having a low birth weight baby. Reduced hemoglobin levels to bind oxygen can indirectly affect the mother and infant, including stunted fetal growth (IUGR). Meanwhile, mothers may experience an increased risk of bleeding before and during delivery. Even anemia can cause death for the mother and her baby if the pregnant woman suffers from severe anemia (Edelson et al., 2023) (Edelson et al., 2023).

Factors Associated between Gemelli and the Incidence of IUGR

The results showed a significant relationship between anemia and the incidence of IUGR. This is in line with the research of Wu et al (2016), where there is a significant relationship between Gemelli and IUGR (p-value <0.05; α <0.05). Gemelli pregnancy is a pregnancy that consists of two fetuses in the womb at the same time. Gemelli pregnancies are more risky than singleton pregnancies. Gemelli pregnancies have significant risks to the mother, such as miscarriage, anemia, gestational diabetes mellitus, and preeclampsia, and threats to the infant, such as premature birth, low birth weight, IUGR, and congenital abnormalities. In Gemelli pregnancies, excessive uterine distension occurs, thus exceeding the tolerance limit. Fetal weight in twin pregnancies is smaller than the fetus in single pregnancies at the same gestational age. This is because excessive stretching causes reduced blood circulation and oxygenation to the fetus (Puccio et al., 2013; Saffira et al., 2020).

CONCLUSION

Intrauterine Growth Restriction (IUGR) is a condition that causes fetal growth to be stunted. Several factors that affect IUGR include the age of the pregnancy, parity (multipara or grand multipara), hypertension as a comorbidity, preeclampsia, nutritional status of pregnancy, anemia during pregnancy, and multiple pregnancies. Some of these risk factors can be modified and prevented by pregnant women by carrying out routine checks.

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ORIGINAL RESEARCH

BODY MASS INDEX STATUS WITH HYPERTENSION

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ABSTRACT	Keywords
Hypertension is the leading cause of premature death in the world. It does not only attack the productive age but also attacks the elderly. Hypertension is known as "The Silent Killer" because it is often without complaints and there are complications. Body Mass Index (BMI) is very influential on blood pressure. Abnormal BMI has twice the chance of experiencing hypertension and triggers higher risk factors for hypertension than normal people. This research aims to determine the relationship between BMI and the incidence of hypertension in Ngablak Hamlet, Sitimulyo Piyungan Village, Bantul, Yogyakarta. This research was an analytic observational study with a cross-sectional research design. Sampling used the Accidental Sampling technique with 30 respondents based on the inclusion and exclusion criteria. Measuring instruments used to collect BMI data were weight scales and height measuring devices (cm) and measuring instruments used to measure blood pressure are stethoscopes and sphygmomannometers. Measurements consisted of systolic and diastolic blood pressure, weight, and height. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 16.0 program. The results of this research showed a significance value of 0.044 (p <0.05). thus, there was a significant relationship between BMI and the incidence of hypertension in Ngablak Hamlet, Sitimulyo Piyungan Village, Bantul Yogyakarta.	*Growth and Development, Toddler, Calcium, Pregnancy*

INTRODUCTION

Hypertension is a condition in which systolic blood pressure is ≥140 mmHg and/or diastolic blood pressure is ≥90 mmHg with 2-3 visits 1 week in adults >18 years, often without complaints, then finding complicating diseases or complications arise (Unger et al. al., 2020). Hypertension is the main cause of premature death worldwide. The World Health Organization (WHO) states that the total number of cases of hypertension is 22% of the total world population. The African region is in the highest place at 27% and Southeast Asia is in the third highest place at 25% after the Eastern Mediterranean at 26% (Kemenkes RI, 2019).

The results of the 2018 Riskesdas (Basic Health Research) total number of cases of hypertension in Indonesia in the population aged > 18 years nationally was 34.11% higher than in 2013 of 25.8% in. This increase occurred in almost all provinces in Indonesia (Kemenkes RI, 2019). Results of Riskesdas of Yogyakarta City (2018), the total number of cases of hypertension in Yogyakarta was 9.94% or 32,248 cases (Dinkes Kota Yogyakarta, 2020). Bantul Regency from January to December 2020 recorded 87,422 cases. Data from 27 health

centers in the Bantul district, the health centers that contributed the most to the number of cases of hypertension occurred in the work area of the Piyungan health center, with 5,677 cases (Cardoso *et al.*, 2019).

Causes of hypertension are distinguished by essential/primary hypertension or the cause is unknown 90% and secondary hypertension or the cause can be found 10%. Hypertension has risk factors that cannot be modified including a family history of hypertension, age over 65 years, and co-morbidities such as diabetes or kidney disease. Modifiable risk factors consisted of an unhealthy diet (consumption of excessive salt, a diet high in saturated fat and trans-fat, low fruit and vegetable intake), physical activity, consumption of tobacco, alcohol, and a BMI above normal. (Kemenkes RI, 2019).

BMI is a simple screening tool/index to find out the ideal body weight range and predict body health. It is used to classify underweight, normal, overweight, and obese conditions in a person based on weight and height. BMI is an individual's weight in kilograms divided by the square of his height in meters (kg/m2) (CDC, 2022). The effect of BMI on increased blood pressure is multifactorial and exacerbates the increase in blood pressure (Kurniawan *et al.*, 2021). Several studies have examined the relationship between BMI and the incidence of hypertension. The results have proven that BMI is the most dominant risk factor for influencing the occurrence of hypertension. From the results of research conducted by (Yulia, Siska and Himawan, 2021), there is a relationship between Body Mass Index and the incidence of hypertension in the elderly, and the elderly who have a BMI are at risk of experiencing hypertension. There is also research that has been conducted by (Herdiani, 2019) stating that there is a significant relationship between BMI and hypertension in the elderly where they have a higher chance of experiencing hypertension.

METHOD

This research was a type of quantitative research using an analytic observational design with a Cross Section Study approach. It took measurements simultaneously with only one follow-up. The population was all hypertension respondents in Ngablak Hamlet for public health services of 59 respondents. The inclusion criteria were age over 30 years, Systolic Blood Pressure ≥140, and/or Diastolic Blood Pressure (DBP) ≥90. Exclusion criteria were respondents' refusal to be included in this research, pregnant respondents, and respondents who were active smokers or consumed alcohol. The sampling technique in this research was Accidental Sampling, namely accidental sampling by taking cases or respondents who occurred to be available somewhere that met the inclusion and exclusion criteria (Sugiyono and Mitha Erlisya Puspandhani, 2020). The number of samples in this research that met the inclusion and exclusion criteria was 30 respondents. This research was conducted on June 18 2022 at the participants of the Posyandu in Ngablak Hamlet, Sitimulyo Village, Piyungan, Bantul, Yogyakarta.

The tools used in this research were the ABN sphygmomanometer and ABN stethoscope to measure blood pressure, 120 kg GEA body scales to measure body weight, and the Onemed meter with a length range of 0-200 cm to measure height. Data analysis was performed using the Spearman correlation test with an error rate <0.05 and using an ordinal scale (interpretation). Statistical analysis of data was carried out using the Statistical Package for Social Sciences (SPSS).

RESULTS

A. Characteristic of Respondent

Table 1. Basic Characteristics Based on Age, Gender, and Occupation

No	Variable		N	%
1.	Age	30-44 years old	6	20,0
		45-54 years old	3	10,0
		55-65 years old	5	16,7
		66-74 years old	12	40,0
		75-90 years old	4	13,3
		Total	**30**	**100**
2	Gender	Man	4	13.3
		Woman	26	86.7
		Total	**30**	**100**
3	Occupation	Farmer	4	13.3
		Housewife	11	36.7
		Seller	9	30.0
		Labor	6	20.0
		Total	**30**	**100**

Source: Primary Data 2022

Table 1 shows that most respondents were 66-74 years old with a total of 12 (40.0%) respondents. The most gender women of 26 (86.7%) respondents and 4 (13.3%). %) men of respondents and the majority occupation were housewives (IRT) of 11 (36.7%) respondents.

Table 2. Frequency Distribution of Body Mass Index in Hypertension Respondents

BMI	Frequency (n)	Percentage (%)
Underweight	2	6.7
Normal	11	36.7
Overweight	13	43.3
Obesity class 1	4	13.3
Obesity class 2	0	0
Obesity class 3	0	0
Total	**30**	**100**

Source: Primary Data 2022

Based on Table 2, it is known that the highest BMI frequency was overweight of 13 respondents (43.3%) and the lowest was underweight of 2 (6.7%) respondents.

Table 3. Frequency Distribution of Respondents' Hypertension in Ngablak Hamlet

Hypertension	Frequency (n)	Percentage (%)
Hypertension 1	19	63.3
Hypertension 2	7	23.3
Hypertension 3	4	13.3
Total	**30**	**100.0**

Source: Primary Data 2022

Based on the data in Table 3, it can be concluded that the results of the examination mostly suffered from hypertension 1 of 19 (63.3%) respondents and the lowest was hypertension 3 of 4 (13.3%) respondents.

Table 4. Cross tabulation between Body Mass Index and Hypertension

	HT1	HT2	HT 3	N	%
Underweight	0	1	1	**2**	**6.7**
Normal	7	1	3	**11**	**36.7**
Overweight	8	5	0	**13**	**43,3**
Obesity class 1	4	0	0	**4**	**13,3**
N	**19**	**7**	**4**	**30**	**100**
Total (%)	**63,3**	**23.3**	**13.3**	**30**	**100**

Source: Primary Data 2022

Based on Table 4, the respondents with the highest BMI, namely overweight, were 13 (43.3%) respondents and the most hypertension, namely hypertension 1, were 19 (63.3%) respondents. The highest number of hypertension 1 was overweight of 8 (26.7%) respondents, and hypertension 2 was the most overweight

of 5 (16.7%) respondents while the most hypertension 3 was 3 (10.0%) respondents.

Table 5. Correlation Analysis of Blood Pressure with Body Mass Index

	R	ρ value	n
Body Mass Index Blood Pressure	-.370[*]	0,04	30

Source: Primary Data 2022

Based on the Spearman rank correlation test in Table 5, it is known that there was a significant (mean) relationship between BMI and hypertension, namely sig. (2-tailed) of ρ = 0.04 (ρ <0.05) and the level of strength of the relationship was -0.370 or sufficient with the number of correlation coefficients was negative or the relationship between variables was not unidirectional.

DISCUSSION

Based on the data that has been obtained, it is concluded that the majority of the age range of the respondents was 66-74 of 12 (40.0%) respondents. This research was supported by research conducted by Yulnefia, (2020) in Pekanbaru City. It showed that most respondents with hypertension based on age were 60-74 years of 25 (40.9%) patients. The older a person is, the risk of developing hypertension will increase. This happens because of natural conditions in the body that affect the heart, blood vessels, and hormones. The function of the organs also decreases with age. As people get older, the risk of developing hypertension is greater. Hence, the prevalence among the elderly is quite high. Arteries lose elasticity or flexibility and blood pressure increases with age (Ekarini, Wahyuni and Sulistyowati, 2020).

The results of this research showed that the majority were women, with 26 (86.7%)

respondents compared to men. This research was following research by (Abineno and Malinti, 2022) in Ponain Village which showed that the majority of hypertension respondents were women with a total of 61 (55.5%) respondents. Lower estrogen levels after menopause may partly explain lower arterial compliance and increased risk of hypertension in older women (Abramson *et al.*, 2018).

The results of the field data for the majority of the sample were housewives (IRT) 36.7%, who had less physical activity. This research was following research by (Marleni, 2020) in Palembang which showed that there were more respondents with light physical activity with a result of 51 (58.0%) respondents. Physical activity greatly affects the stability of blood pressure. People who are not physically active tend to have a higher heart rate. This causes the heart muscle to work harder with each contraction. The harder the heart muscle tries to pump blood, the greater the pressure that is imposed on the arterial walls, thereby increasing peripheral resistance which causes an increase in blood pressure. Lack of physical activity can also increase the risk of being overweight which will cause the risk of hypertension to increase (Herawati, Indragiri and Melati, 2020).

The results showed that the highest BMI frequency characteristic was overweight of 13 (43.3%) respondents. The same results were also found by Kurniawan et al., (2021) in East Java regarding BMI showing that more patients were overweight (42.3% of respondents). BMI above normal (overweight or obesity) increases the risk of developing hypertension because the greater the body mass, the more blood supply is needed to supply oxygen and nutrients to the body's tissues. This results in the volume of blood circulating through the blood vessels increasing. Thus, the

pressure on the artery walls becomes greater. Being overweight also increases heart rate and insulin levels in the blood. Increased insulin levels cause the body to retain sodium and water (Tiara, 2020).

According to WHO (2022), an increase in BMI is a major risk factor for non-communicable diseases such as hypertension because the greater the body mass, the more blood supply is needed to supply oxygen and nutrients to body tissues. This results in the volume of blood circulating through the blood vessels increasing. Hence, the pressure on the artery walls becomes greater (Tiara, 2020).

CONCLUSIONS

There is a significant relationship between BMI and the incidence of hypertension, namely $\rho = 0.04$ ($\rho < 0.05$). BMI above normal increases the risk of hypertension because the greater the body mass, the more blood supply is needed to supply oxygen and nutrients to the body's tissues. This results in the volume of blood circulating through the blood vessels increasing. Therefore, the pressure on the artery walls becomes greater.

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ORIGINAL RESEARCH

EVALUATION OF THE LEVEL OF COMMUNITY KNOWLEDGE ABOUT HOW TO USE AND ANTIBIOTIC RESISTANCE IN DUPOK VILLAGE, BANGKALAN REGENCY

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ABSTRACT	Keywords
Abstract Antibiotics are drugs that we often encounter in everyday life, not infrequently doctors often prescribe this one drug, but in use in the community there are still often errors in consuming antibiotics resulting in antibiotic resistance or resistance to an antibiotic. The occurrence of misuse of antibiotics is caused by lack of public knowledge and lack of education from medical personnel in hospitals. Low level of knowledge about the use of antibiotics can cause inappropriate use of antibiotics, so there is a risk of causing antibiotic side effects. Providing education is one way that can be used to increase knowledge about the rational use of antibiotics. The purpose of this study is to determine the level of public knowledge about how to use antibiotics and antibiotic resistance. The study was conducted in Dupok Village, Bangakalan Regency, this type of research was *cross sectional through a survey with questionnaire media. Sampling was carried out using the cluster sampling method* involving 100 households (Family Heads). The research instrument used was a closed questionnaire with a total of 10 questions. The data obtained is then analyzed descriptively.	*Keywords: Level of knowledge, how to use antibiotics, antibiotic resistance, dupok bangkalan.*

INTRODUCTION

Antibiotics are one of the most widely prescribed drugs worldwide (1). Antibiotics are drugs that function to kill or inhibit bacterial growth. Antibiotics belong to the class of hard drugs that are widely used in the management of pharmacological therapy (2), irrational use of antibiotics and lack of public knowledge about the use of these antibiotics that cause resistance. Antibiotic resistance is when bacteria cannot be killed by an antibiotic. The main cause of antibiotic resistance is its widespread and irrational use. More than half of patients in hospital care receive antibiotics as treatment or prophylaxis. About 80% of antibiotic consumption is used for human benefit and at least 40% based on inappropriate indications, such as viral infections (3). In addition, about 40-62% of antibiotics are used inappropriately for diseases that do not actually require antibiotics and as many as 30%-80% of antibiotic use is not based on indications (4), then, high and unwise prescribing of antibiotics in Indonesia will increase the incidence of resistance (5).

The survey was conducted by the Center for Indonesian Veterinary Analitical Studies (CIVAS) for three years from September 2013 to August 2016. In hospitals in Klaten, Karanganyar and Sukoharjo Regency, it shows that the level of patient knowledge about the use of antibiotics in hospitals in these areas is still low, namely

61.1% (6). The results of research conducted by WHO from 12 countries including Indonesia, as many as 53-62% stop taking antibiotics when they feel cured. WHO coordinates a global campaign to raise public awareness and behavior towards antibiotics. It is estimated that the death toll from antibiotic resistance by 2050 will be 10 million, of which 4.7 million are Asian. The high rate of antibiotic resistance is caused by several factors, such as social, economic, educational, type of work, experience and age. The higher a person's education, the more he will not use antibiotics carelessly (7). Efforts to minimize antibiotic resistance include educating the public about antibiotic knowledge, and providing an understanding of patient knowledge and attitudes towards antibiotic use (8). Education on the use of antibiotics to the public will reduce the occurrence of antibiotic resistance, this will certainly be a very good impact and a way to educate the public in using antibiotics correctly. Based on the background described above, the researcher is interested in researching the evaluation of the level of community knowledge about how to use and antibiotic resistance in Dupok Village, Bangkalan Regency.

METHOD

This research is a descriptive study with a cross sectional design. The data collection process was carried out in the period June-July 2023 by distributing questionnaires that had been tested valid (0.348-0.693) and reliable r = 0.902 (9). The population in this study was a community in Dupok Village, Bangkalan Regency which was then sampled using cluster sampling techniques. Cluster sampling is used when the data sources are very broad, such as the population of a country, province and district where the groups have a high similarity but are internally quite varied (10). The sampling technique used has two stages. The first stage determines the sample area or area and the second stage determines the sample in the selected area. The instruments used in this study were questionnaires, questions on the

questionnaire as many as 10 questions consisting of 5 questions about how to use antibiotics and 5 questions about antibiotic resistance. The data obtained were then analyzed using guidelines from Notoadmojo (2010). Data collection conducted using questionnaires will be given to respondents. The questionnaire is made using the Rating Scale in the form of a check list (√) correct answers worth 2 incorrect answers worth 0 (11). Each participant's score is then grouped based on the percentage obtained by the correct sum formula divided by the total number of scores where good grades if ≥ 65% and bad grades ≥ 35%.

RESULTS

This study is a study that uses a descriptive analysis approach that aims to provide an overview of the level of public knowledge about how to use antibiotics and knowledge about antibiotic resistance, the respondents used were housewives in Dupok Village, Bangkalan Regency who had consumed antibiotics. Antibiotics are drugs that come from all or a specific part of microorganisms and are used to treat bacterial infections. Antibiotics exist that kill bacteria and limit bacterial growth. The use of antibiotics has long been used to fight diseases caused by infection by microorganisms, especially bacteria (12).

DISCUSSION

Respondents' level of knowledge of antibiotic use

Assessment of the level of public knowledge of antibiotic use and antibiotic resistance using a questionnaire consisting of 10 statement items with true or false answer choices. The scores on this questionnaire are 1 and 0 which are different for each item.

No.	Question	True (%)	False (%)
1.	The minimum limit for taking antibiotics is 3 days	56	42
2.	All antibiotics taken 3x daily	31,3	68,7

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3.	When cured antibiotics do not need to be taken again / spent	28,2	71,8
4.	All diseases can be cured with antibiotics	43,1	56,9
5.	Side effects that often appear when using antibiotics are allergies, nausea and vomiting	72	28
6.	The use of inappropriate antibiotics can cause bacterial resistance to antibacterial so that the patient becomes incured which is called resistant	33,1	66,9
7.	Take erythromycin tablets preferably on an empty stomach	62	38
8.	Antibiotic resistance can be prevented by rational consumption of antibiotics	27,9	72,1
9.	The consumption of antibiotics 2 times a day is intended to be taken once every 12 hours	43,8	56,2
10.	Antibiotics are used to treat viral infections	34	66

After the questionnaire is analyzed, to determine the level of public knowledge about how to use antibiotics and antibiotic resistance, it is necessary to calculate to find out the score of each respondent so that it can be categorized into GOOD, SUFFICIENT, or LESS.

After analysis, it is known that the category of public knowledge about antibiotics and antibiotic resistance is good 17%, enough 14%, and less 69%. This shows that the average respondent has a level of knowledge of antibiotics that is still relatively lacking. There are several factors that can affect people's knowledge about antibiotic use, namely experience, education level, beliefs, facilities, income and socio-culture (13). According to researchers, the factor that influences people in using antibiotics other than public knowledge is the lack of clearer information related to the use of antibiotics given by doctors and pharmacists (8).

CONCLUSIONS

Based on the research that has been done, it can be concluded that the percentage of antibiotic knowledge level in the Dupok community of Bangkalan Regency is still less with a percentage of 69%. The need for education and cooperation between health workers in explaining how to use antibiotics correctly so as to reduce antibiotic resistance among the community.

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FOAM DRESSING ON WOUND HEALING PROSES IN POST FRACTURE OPERATION PATIENTS

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ABSTRACT	Keywords
Modern wound dressing is a technique of wound care that focuses on moist principles so that the use of wound dressing plays an important role in accelerating the wound healing process. This study aims to determine the Effect of Modern Wound Care with Foam Dressing on the Wound Healing Process of Post Patient's Femur Fracture Surgery. The study used a pre-experiment one group pretest posttest design. The sampling used was accident sampling. The independent variable of the study was modern wound care with foam dressing, and the dependent variable of the study was the wound healing process, assessed by Bates-Jensen Wound Assessment tools. The results of the study before the intervention, the mean Bates-Jensen Wound Assessment score was 23.50 with a standard deviation of 1.080, a minimum value of 23.00 and a maximum value of 26.00. The results of the study after the intervention, the mean score was 15.50 with a standard deviation of 0.850, a minimum value of 15.50 and a maximum value of 17.00. Post operative wound care with foam dressings is expected to be applied and routinely carried out according to the wound care schedule of postoperative patients in order to improve the quality of health services.	*Foam Dressing, wound, post fracture operation*

INTRODUCTION

Post femur fracture surgery is the time after done surgery in affected patients injury or fracture of the femur, ie according to fracture type and type performed operations that started at the moment patient moved from room surgery until to the maintenance unit. because it, deep room maintenance need exists gift care optimal nursing ie management good wound (Brunner & Suddarth, 2010). Maintenance wound aim For clean and avoid wound from shit , help speed up emergence cells epithelium or healing process as well as prevent happening infection (Carville, 2007). *Modern wound dressing* is technique maintenance a wound that focuses on principle *moist* until use dressing or *dressings* wound have role important, researcher get that on care wound *post* femoral fracture surgery was obtained dressing wound Still use cash register

Femur fracture is disconnection continuity femoral bone that can happen as a result of trauma direct. If somebody suffered a fracture on the part here, patient will experience bleeding profusely and can resulted sufferer experience shock. One procedures performed on fracture patients surgery (Brunner & Suddarth, 2010; Heinig & Almqvist, 2013). *Post* femur fracture surgery is the time after done surgery in patients with femoral fractures, ie according to fracture type, type operations performed and started at the time patient moved from room surgery until to the maintenance unit.

Because that management maintenance wound needed for increase healing, preventing damage skin more further, reduce risk infection, and improve comfort patient. Femur fracture can cause complications, long morbidity and disability if no get good handling (Brunner & Suddarth, 2010; Obaidur Rahman et al, 2013; Tseng et al, 2013).

Treatment technique wound the latest in the medical world that is with use principle moist and closed, atmosphere moist support healing process occurs injuries (Blackley, 2004). Treatment technique wound damp and closed or known moist wound healing is method for maintain humidity wound with use material dressing retainer humidity so that network wound experience chance for proliferate do cycle repair cell with ok. Draft moist wound healing become base emergence *modern dressings* (Shah, 2012). Nurse demanded For have adequate knowledge and skills related with the treatment process the wound started from comprehensive assessment, planning appropriate intervention, implementation action, evaluation results found during maintenance as well as documentation systematic results (Agustina, 2009) . Another issue that must be understood nurse is related with cost effectiveness. Management maintenance Modern wounds are very forward issue the. this the more many innovation latest in development product dressings used in maintenance wound.

dressings is materials used in a manner topical to wounds For protect wound and help healing wound. *dressings* will experience contact direct with wound and different with plaster as retaining dressings. A number of type dressing material, namely: gauze sufratulle, films, composites, hydrogels, hydrocolloids, *alginates*, foams, and other *absorptive dressings* such as *negative pressure wound therapy* (Galiano, 2007). One of the modern dressings for maintenance postoperative wound is *foam dressing* which is dressing originating wound from Polyurethane. Polyurethane itself is Something material mixture or results solvency between rubber and plastic so that obtained dissolution of materials that

have very durable advantage swipe, hold wear out, hold on to a number of chemistry light, stable in temperature cold and hot. The polyurethane dressing can give effect healing wound with fast because resilience material it and stability generated temperature make wound more fast dry (Webster, 2012). Based on description that, researcher interested For study and understand quality life patient to service maintenance postoperative wound. _ So that researcher take title Influence Modern Wound Treatment with Foam Dressing for the Wound Healing Process of Post Femoral Fracture Patients

METHOD

Study This use design pre-experimental research *one-group pre-test post-test* . Sampling used in study This is *accidental sampling. The* total number of samples obtained as many as 10 samples . Variable *independent* in study This is maintenance modern cuts with *foam dressing* . Variable *dependent* in study This is a healing process wound patient *post* femoral fracture surgery with the Bates-JensenWound Observation Sheet Assessment tools. Statistical Test *Wilcoxon* with α = 0.05

RESULTS

Table 1 Distribution frequency Wound healing process before modern wound care with foam dressing in postoperative femur fracture patients.

Respondent No	Score " *Bates-Jensen Wound Assessment Tool* " Before intervention
1	23
2	23
3	23
4	23
5	23
6	26
7	23
8	25
9	23
10	23
Means	23.50
Minimum	23.00
Maximum	26.00
Standard deviation	1,080

On table 1 can is known that the mean score of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 23.50 with a standard deviation of 1.080. The minimum and maximum scores of " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 23.00 and 26.00.

Table 2 Distribution frequency Wound healing process after modern wound care with *foam dressing* in postoperative femur fracture patients.

Respondent No	Score " *Bates-Jensen Wound Assessment Tool* " Before intervention
1	15
2	15
3	16
4	15
5	15
6	17
7	15
8	17
9	15
10	15
Means	15.50
Minimum	15.00
Maximum	17.00
Standard deviation	0.850

On table 2 can is known that the mean score of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 15.50 with a standard deviation of 0.850. The minimum and maximum scores of " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 15.50 and 17.00

Table 3 Tabulation Distribution frequency The Influence of Modern Wound Care with *Foam Dressing* on the Wound Healing Process of Postoperative Femoral Fracture Patients.

Respondent No	Score "Bates-Jensen Wound Assessment Tool" Before intervention	Score "Bates-Jensen Wound Assessment Tool" After intervention
1	23	15
2	23	15
3	23	16
4	23	15
5	23	15
6	26	17
7	23	15
8	25	17
9	23	15
10	23	15
Means	23.50	15.50
Minimum	23.00	15.00
Maximum	26.00	17.00
Standard deviation	1,080	0.850

ρ -*value* = 0.003 ; α = 0.05

On Table 3 shows that of the 10 respondents, there was a change in the postoperative wound healing process for a better femur fracture, namely the average value of the " *Bates-Jensen Wound Assessment Tool* " before the intervention was 23.50 with a standard deviation of 1.080 and after the intervention was 15.50 with a standard deviation of 0.850. The process of postoperative wound healing was also shown at the minimum - maximum value before and after the intervention, from 23.00 - 26.00 to 15.00 - 17.00

The results of hypothesis testing *Wilcoxon* value is obtained significance (ρ - *value*) = 0.00 3 with α = 0.05 . Up to n value significant 0.00 3 ≤ 0.05 (ρ *value* ≤ α), this means that Ho is rejected and Ha is accepted accordingly There is Effect of Modern Wound Treatment with *Foam Dressing* on

the Wound Healing Process of Post Femoral Fracture Patients in Hospitals. Bhayangkara Moestadjab Kindergarten III, Nganjuk Regency

DISCUSSION

1. Identifying the process of wound healing before modern wound care with *foam dressings* in postoperative fracture patients On table 1 can is known that the mean score of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 23.50 with a standard deviation of 1.080. The minimum and maximum scores of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out were 23.00 and 26.00. This score indicates a poor wound healing process according to the " *Bates-Jensen Wound Assessment Tool* " category.

Wound healing is a complex process due to the presence of biocellular and biochemical processes that occur continuously. The wound healing process is not only limited to local regeneration processes, but is also influenced by vascularization, anemia due to bleeding, age, nutrition, other diseases, and obesity (Ferreira et al, 2006). Conventional treatment methods are wound care methods that use gauze as the main treatment method. This treatment method includes passive materials whose main function is to protect the wound from trauma, maintain the wound area or to suppress the wound and the area around the wound and prevent bacterial contamination. Wound development is very slow compared to modern treatments, this can be caused by changing gauze every day which can cause trauma to the wound so that wound healing returns to its initial phase. And for wounds with minimal or moderate exudate, the dressing is only changed once. This causes the wound to tend to be drier which can cause the wound development process to be hampered (Handayani, 2016)

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The process of wound healing that was not good in the observation of the first *postoperative treatment* occurred because it was possible for the respondent to experience bleeding during the ORIF installation operation so that the respondent experienced a lack of hemoglobin levels in the blood which could affect the wound healing process to take longer. The use of gauze as *a dressing* on ORIF bandages can also cause the surgical wound not to get moist conditions as ideal conditions for the wound healing process. In addition, the surgical wound of the femur fracture is still in the inflammatory phase, which is marked by the area of the surgical wound that looks swollen and reddish.

2. Identifying the process of wound healing after modern wound care with *foam dressings* in postoperative femoral fracture patients table 2 can is known that the mean score of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out , namely 15.50 with a standard deviation of 0.850. The minimum and maximum scores of the " *Bates-Jensen Wound Assessment Tool* " from 10 respondents before the intervention was carried out were 15.50 and 17.00.

   Dressings that can maintain moisture on the wound surface will facilitate the process of angiogenesis, in angiogenesis the formation of new blood capillaries occurs where the supply of oxygen and nutrients increases. Another process is increased autolytic debridement, in moist conditions neutrophils increase so that necrotic tissue can be removed and does not cause a pain response. This process also stimulates macrophages to produce growth hormone which can stimulate new cell growth (Keast & Orsted, 2008). A moist wound environment (*moist*) can accelerate the wound healing process by helping to quickly remove fibrin formed in acute or chronic wounds (fibrinolytic) by neutrophils and endothelial cells in a humid atmosphere, reducing the incidence of infection

compared to dry treatment (2,6). % and 7.1%), helped accelerate the invasion of neutrophils followed by macrophages, monocytes and lymphocytes to the wound area (Gitarja, 2008). The results of this study are in line with Luh's research, (2016) which states that *moist wound healing* speeds up the wound healing process by using principles and dressings that are in accordance with *moist wound healing techniques* . In modern wound care with *foam dressings* carried out by researchers, it provides warmth and a *moist environment* to surgical wounds . Moist conditions on the wound surface can improve the process of wound repair, prevent tissue dehydration and cell death. These conditions also increase the interaction of cells and growth factors. Therefore, in the observation of the surgical wound in the 3rd treatment, the results of the *Bates-Jensen Wound Assessment Tool score* were good (the average respondent's score was 15.50) which indicated an improvement in the condition of the surgical wound for the better.

3. Analyzing the Effect of Modern Wound Care with *Foam Dressing* on the Wound Healing Process of Post Femoral Fracture Patients

   On Table 3 shows that of the 10 respondents, there was a change in the wound healing process after the femoral fracture surgery for the better, namely the average value of the " *Bates-Jensen Wound Assessment Tool* " before the intervention was 23.50 with a standard deviation of 1.080 and after the intervention was 15.50 with a standard deviation of 0.850. The process of postoperative wound healing was also shown at the minimum - maximum value before and after the intervention, from 23.00 - 26.00 to 15.00 - 17.00

   Result _ test hypothesis *Wilcoxon* value is obtained significance (ρ - *value*) = 0.00 3 with α = 0.05 . Up to n value significant $0.00\,3 \leq 0.05$ (ρ *value* $\leq \alpha$), this means that Ho is rejected and Ha is accepted accordingly There is Effect of Modern Wound Treatment with *Foam*

Dressing on the Wound Healing Process of Post Femoral Fracture Patients in Hospitals. Bhayangkara Moestadjab Kindergarten III, Nganjuk Regency.

Wound healing is defined as a complex and dynamic process that results in improvements to the anatomical structure and function of tissues (Hess, 2002). The results of Luh's research (2016) stated that *moist wound healing* accelerates the wound healing process by using principles and dressings that are in accordance with modern wound care techniques . Modern wound care products have made a major contribution to wound care methods. The principle of modern wound care products is to maintain and keep the wound environment moist to facilitate the wound healing process, maintain tissue fluid loss and cell death (Delaune, 1998 in Sartika & Dewi, 2008). *Foam* is a foam that has been modified so that it has high exudate absorption but is controlled because it consists of matrix cells of different sizes, is soft and flexible and can be useful as a cushion to protect wounds. *Foam dressings* can absorb a lot of liquid, so they are very suitable for use in the early stages of wound growth. In addition, *dressing foam* is comfortable and soft on the skin and can be used for several days so that it can save *costs* on patient care (Fatmadona & Oktarina, 2016). The results of research on wound care techniques with the principle of *moist* and covered with *dressings* made from poly-ethylene (foam) have the advantage that wounds can heal 2 times faster than wounds that are left to dry (Shah, 2012). This is in accordance with the results of Frank's research (2006) which said that several studies have proven that *modern dressings* are more effective than gauze *dressings* . The results of this study are in accordance with Faswita's research (2016) which states that there is an effect of modern wound care measures on the speed of the wound healing process after open fracture surgery . One form of physiological problems in postoperative patients with limb fractures is appearance limitations movement that causes weakness _ obstructed muscle and vascularization of the postoperative wound area so that exercise mobilization active nor passive and caring good wound _ be one _ factor important in support recovery wound *post* operation . According to healing process researcher femoral fracture postoperative wound after given *foam dressing* delivers optimal results so maintenance postoperative wound _ must routine done in accordance timetable take care wound . Besides That development *modern dressings* must offset with enhancement knowledge and skills clinical For support maintenance quality wound . _ Nurse have role important in nurse patient *post* femoral fracture surgery , ie support unification discontinuity femur bone , prevention infection and accelerate healing postoperative wound _ with method do maintenance wound *modern* , for one use *foam dressing* . Management House Sick more notice facilities and infrastructure specifically tools _ _ For maintenance modern wounds as well maximizing knowledge nurse through maintenance training and seminars wound.

CONCLUSIONS

The process of wound healing before modern wound care with foam dressings in postoperative femoral fracture patients at the hospital. Bhayangkara Moestadjab TK III Nganjuk Regency has a mean value of 23.50 with a standard deviation of 1.080, a minimum value of 23.00 and a maximum value of 26.00. The process of wound healing after modern wound care with foam dressings in postoperative femoral fracture patients at the hospital. Bhayangkara Moestadjab TK III Nganjuk Regency has an average value of 15.50 with a standard deviation of 0.850, a minimum value of 15.50 and a maximum value of 17.00. Modern wound care with

foam dressings has an effect on the wound healing process in postoperative femur fracture patients at the hospital. Bhayangkara Moestadjab Kindergarten III, Nganjuk Regency. This is based on the results of the Wilcoxon hypothesis test with a significant value of $0.003 \leq 0.05$.

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ORIGINAL RESEARCH

VACCINATION STATUS AND THE SEVERITY OF COVID-19 PATIENTS

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ABSTRACT	Keywords
Introduction: On January 30, 2020, the SARS-CoV-2 outbreak was a public health emergency of international concern. At the end of 2022 there was still the spread of COVID-19 even though the pandemic status had changed to endemic. One of the efforts to reduce the risk of being infected with COVID-19 is the provision of vaccines to the community. However, previous studies have shown that some people who have been vaccinated still have confirmed COVID-19 with varying severity and symptoms. The purpose of the study was to determine the relationship between vaccination status and the severity of COVID-19. **Method:** This quantitative research with a retrospective cohort study was applied to 92 COVID-19 patients at a secondary hospital in Purbalingga, Central Java, Indonesia recruited by proportional simple random sampling technique. The data were collected from the medical records of COVID-19 patients from May to August 2021. The severity and symptoms of COVID-19 were determined based on the guidelines of the National Institutes of Health which include asymptomatic infection, mild symptoms, moderate symptoms, severe symptoms, and critical. The collected data were analyzed using the Fisher's Exact test. **Results:** Of the 92 respondents, there were 49 (53.35%) male patients and the most comorbid was diabetes mellitus with a total of 28 (30.4%) patients. Respondents who have not been vaccinated are 64 (69.6%) patients. Patients with a high severity level of COVID-19 were more frequently found among respondents who had not been vaccinated, 54 (58.7%). There is a relationship between vaccination status and the severity of COVID-19 (p = 0.000). The public is advised to complete the vaccine status that has been facilitated by the government. **Conclusion:** Vaccination potentially reduces the severity of COVID-19.	**COVID-19, Severity, Vaccination**

INTRODUCTION

Coronavirus disease 2019 or Covid-19 is a new type of highly contagious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS–CoV-2) (Cascella et al., 2021). At the end of January 2020, the World Health Organization (2021) declared that the SARS-CoV-2 outbreak was a public health emergency of international concern. The COVID-19 pandemic has urged the international scientific community to find therapies and vaccines that can control SARS-CoV-2 (Kaur & Gupta, 2020).

The Ministry of Health of the Republic of Indonesia (2021) reports that on September 22, 2021, there have been 4,198,678 cases since Covid-19 entered Indonesia, and 140,954 cases have died. According to Worldometer data on July 5,

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2022, there were 6,095,351 cases of Covid-19 in Indonesia, with 156,758 deaths. The Ministry of Health of the Republic of Indonesia (2021) reported that on September 22, 2021, Indonesia was ranked 19th with the most cases in the world. Central Java province occupies the 3rd most total cases in Indonesia, namely 456,579 cases, and the highest mortality prevalence with 32,401 cases (Ministry of Health of the Republic of Indonesia, 2021). In Purbalingga Regency on December 25, 2021, there were 20,673 Covid-19 cases and 1,213 deaths (Purbalingga District Health Office, 2021). The prevalence of death in Purbalingga is 6% which is almost double the national death rate (Purbalingga District Health Office, 2021).

If not treated properly, Covid-19 patients will experience acute respiratory distress syndrome and death (Fatoni, 2021). Based on government reports, the age group with the highest death rate is over 60 years old (Ministry of Health of the Republic of Indonesia, 2021). One of the causes of the high mortality of elderly people with Covid-19 is the low vaccination coverage among them (Ministry of Health of the Republic of Indonesia, 2021). Data to the Ministry of Health of the Republic of Indonesia as of November 8, 2021, dose 1 vaccine has only been given to 9,299,745 people, or 43% of the total target for the elderly (Ministry of Health of the Republic of Indonesia, 2021). Doubts about the effectiveness and safety of vaccines are one of the reasons for slow vaccination in the community (Putri et al., 2021). Acceleration of vaccination is very important to deal with wave 3 of Covid-19 in early 2022 (Ministry of Health of the Republic of Indonesia, 2021).

The right action to reduce mortality due to Covid-19 is mass vaccination (WHO, 2021). Vaccines are one of the most reliable and cost-effective public health interventions ever implemented that save millions of lives every year (El-Elimat et al., 2021). The initial focus of the SARS-CoV-2 vaccine was to prevent symptomatic and often severe diseases (WHO, 2021). The effectiveness of the Sinovac vaccine has been studied in Chile with an efficacy of 65.9% for the prevention of Covid-19 and 87.5 for the prevention of hospitalization (Jara et al., 2021). Research in the UK on the AstraZeneca vaccine with the results of being able to prevent symptomatic Covid-19 as much as 73-85% after the second dose (Pritchard et al., 2021). Research in Indonesia by the Health Research and Development Agency of the Ministry of Health of the Republic of Indonesia on 71,455 health workers in Jakarta shows that the length of treatment for health workers who have been vaccinated is relatively shorter (Ministry of Health of the Republic of Indonesia, 2021). Vaccination is recognized to be very effective, but vaccine effectiveness decreases after 200 days, especially for older patients or those with certain comorbidities, so additional protection in the form of a booster vaccination is needed (Wright et al., 2022).

Previous studies have proven that there is a relationship between vaccination status and severity in Covid-19 patients. These studies have been carried out in various countries and Jakarta, Indonesia, but have never been carried out in the Purbalingga Regency, Central Java. So, it is necessary to research "The relationship between vaccination status and the severity of Covid-19 in Purbalingga Regency". Another reason is the low number of third dose vaccination coverage as of April 5, 2022 (8.12%) in Purbalingga Regency, Central Java (Ministry of Health of the Republic of Indonesia, 2021). The purpose of this study was to determine the relationship between vaccine status and the severity of COVID-19 patients.

METHODS

The research design used is correlational analytic. The approach used is a retrospective cohort study, which looks at the vaccine status and severity of Covid-19 from the respondents' medical records from May to August 2021 at the Dr. R. Goeteng Taroenadibrata Purbalingga, Central Java.

The study population was Covid-19 patients who had been treated at the Dr. R. Goeteng Taroenadibrata Purbalingga a total of 884 patients with details in May 2021 54 patients were hospitalized, in June 2021 there were 130 patients, in July 2021 there were 425 patients, and August 2021 there were 275 patients. The sampling technique used is proportional simple random sampling. The research sample was calculated using the

Lemeshow formula with the results of 92 respondents (May = 6, June = 13, July = 44, August = 29).

The instrument used consists of a checklist to determine the vaccine status of respondents referring to the Centers for Disease Control and Prevention (CDC) which classifies vaccine status as follows: not vaccinated, the first dose vaccinated, and a complete dose of vaccine. The second checklist to find out the severity of Covid-19 refers to the National Institutes of Health (2021). The severity of Covid-19 is divided into 4 classifications: asymptomatic, mild symptoms, moderate symptoms, and severe/critical symptoms. The relationship between vaccine status and COVID-19 severity was tested using Fisher Exact non-parametric statistics.

RESULTS
Respondent characteristics

Table 1. Frequency distribution of respondent characteristics based on age, gender, occupation, education, and comorbidities (N = 92)

Characteristics	Distribution	
	Frequency	Percentage (%)
Age		
21-30 years	11	12
31- 40 years	12	13
41-50 years	15	16.3
51-60 years	28	30.4
61-70 years	21	22.8
71-80 years	5	5.4
Gender		
Male	49	53,3
Female	43	46,7
Educational background		
Elementary school	35	38
Junior high school	16	17.3
Senior high school	27	29,3
College	14	15,2
Occupation		
Health workers	3	3.3
Farmer	9	9.8
Self-employed	49	55.3
Housewife	21	22.8
Government employees	10	10.9
Comorbid		
DM	28	30.4
Cardiovascular disease	18	19.6
Hypertension	23	25
Respiratory disease	11	12
HIV/AIDs	1	1.1
Without comorbid	11	12

Table 1 shows that the majority of the age of Covid-19 patients are in the range of 50-60 years with a total of 28 (30.4%) respondents. There are 49 (53.3%) male patients with Covid-19, 35 (38%) respondents with an elementary school education level, and 49 (55.3%) respondents who are self-employed. Diabetes mellitus was the most comorbid,

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with 28 (30.4%) respondents.

Vaccination status

Table 2. Distribution of the frequency of vaccination status of Covid-19 patients (N = 92)

Vaccination status	Frequency	Percentage (%)
Not vaccinated	64	69.6
The first dose of the vaccine	5	5.4
Second dose of vaccine	23	25
Total	92	100

Table 2 shows that of the 92 samples, 64 (69.6%) respondents had not been vaccinated, 5 (5.4%) had received the first dose of vaccine, and 23 (25%) respondents had received the second dose of vaccine.

The severity of the Covid-19 patient

Table 3. Frequency distribution of severity of Covid-19 patients (N = 92)

Vaccination status	The severity of the Covid-19 patient			
	Asymptomatic	Mild	Moderate	Severe/Critical
Not vaccinated	0 (0%)	3 (3.3%)	7 (7.6%)	54 (58.6%)
The first dose of the vaccine	0 (0%)	2 (2.2%)	0 (0%)	3 (3,3%)
Second dose of vaccine	0 (0%)	21 (22.8%)	0 (0%)	2 (2.2%)
Total	0 (0%)	26 (28.3%)	7 (7.6%)	59 (64.1%)

In table 3, it can be seen that from 92 respondents there were 59 (64.1%) patients with severe/critical symptoms, 26 (28.3%) patients with mild symptoms, and 7 (7.6%) patients with moderate symptoms. There were 54 (58.6%) respondents who had not been vaccinated and experienced severe symptoms. In respondents who had been vaccinated with the first dose, 3 people were experiencing severe symptoms. Of the respondents who had received the second dose of the vaccine, there were 2 people with severe symptoms, and 21 people experiencing mild symptoms.

Relationship between vaccination status and severity of Covid-19 patients

Table 4. Fisher Exact test results: Relationship between vaccine status and disease severity (N = 92).

Vaccination status	Severity				p-value	OR
	Asymptomatic - mild		Moderate - severe			
	N	%	N	%		
Not vaccinated	4	4.3	62	67.3	0.000	65.1
Vaccine doses 1 & 2	21	22.8	5	5.4		
Total	25	27.1	67	72		

Table 4 shows that 62 (67.3%) respondents who have not been vaccinated experienced moderate to severe Covid-19 symptoms. Meanwhile, only 5 (5.4%) respondents who had received doses 1 and 2 of the vaccine experienced severe symptoms. The results of the Fisher Exact test get a p-value of 0.000 (<0.05) and an OR value of 65.1 which means that there is a relationship between vaccination status and the severity of Covid-19, where individuals who are not vaccinated have a 65.1 times greater chance of experiencing moderate to severe symptoms than those who are vaccinated.

DISCUSSION

Respondent characteristics

Of the 92 respondents, there were 28 (30.4%) patients with an age range of 51-60 years and 21 (22.8%) patients with an age range of 61-70 years. Chen et al (2020) explained that most of the Covid-19 patients who were hospitalized were over 50 years old (67%). People aged over 50 years have an increased risk of being infected with Covid-19 or even dying from Covid-19 due to degeneration factors and comorbidities (Pastor-Barriuso et al., 2020; Israfil et al., 2021). One of the factors that contribute to the risk of being infected with Covid-19 and death in the

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elderly is the presence of comorbidities because the average number of comorbidities grows gradually with age (Divo et al., 2014). The results of this study also showed that more men were hospitalized (53.3%, n = 92) than women. Chen et al (2020) in their research stated that more men with Covid-19 were hospitalized by 68%. Another study by Sadie et al (2021) showed that men received more intensive care in hospitals than women. Although epidemiological studies reveal differences in mortality rates between men and women among people diagnosed with Covid-19 and the reasons behind gender differences in mortality remain unknown (Wenham et al., 2020). There are several possible reasons explaining that females, who carry an X chromosome, have a high density of immune-related genes, resulting in biological differences that may contribute to faster pathogen clearance than males (Gompers et al., 2021). Women have higher innate and adaptive responses, resulting in a better immune response than men (Klein & Flanagan, 2016).

At the education level, it is known that there are 35 (38%) respondents who have an elementary school educational background. The causal relationship between lower education and the risk of COVID-19 severity is still not epidemiologically clear, as to whether people with lower educational backgrounds are more likely to develop severe COVID-19 symptoms (Yoshikawa & Asaba, 2021). However, people with low education may be more likely to be socio-economically disadvantaged and have an increased risk of SARS-CoV-2 transmission due to poor housing, overcrowding, and essential low-paying jobs that make social distancing all the more glaring (Yoshikawa & Asaba, 2021).

Most of the respondents' occupations were self-employed (55.3%, n = 92) and the least were health workers (3.3%, n = 92). Research conducted by Chen et al (2020) shows that self-employed rank first to be exposed to Covid-19. Employment can have a relationship with the incidence of Covid-19 (Selden & Berdahl, 2021). Some work that cannot be done at home has the potential to increase the incidence of Covid-19 numbers (Selden & Berdahl, 2021).

Diabetes mellitus was the most common comorbidity suffered by respondents (30.4%, n = 92), followed by hypertension (25%, n = 92), and cardiovascular disease (19.6%, n = 92). Older adult Covid-19 patients of all ages who have underlying medical conditions, such as diabetes and hypertension, have shown a poorer prognosis (Singh et al., 2020). Sanyaolu et al., (2020) also explained that Covid-19 patients who have co-morbidities with diabetes, hypertension, and cardiovascular disease have a risk of developing the severity of Covid-19 disease.

From the results of this study and previous studies, it can be concluded that over 50 years of age have a higher risk of being exposed to Covid-19, men are more at risk of infection than women, and education is not directly related to the risk of being infected with Covid-19. Work done outside the home, such as self-employment, has the potential to spread Covid-19. The most co-morbidities in Covid-19 patients are DM, hypertension, and cardiovascular disease.

Vaccination status of Covid-19 patients at RSUD Dr. R. Goeteng Taroenadibrata Purbalingga.

The results showed that 64 (69.6%) of Covid-19 patients who were hospitalized had not been vaccinated. A study by the Agency for Health Research and Development (LITBANGKES) in 2021 showed that the elderly was ranked first as 9308 (75%) patients who had not been vaccinated (Ministry of Health of the Republic of Indonesia, 2021). Zhang et al. (2022) stated that respondents who were not vaccinated were more likely to be hospitalized. Vaccination coverage in Indonesia as of June 30, 2021, is still very low, for the first dose, which is only 16% of the total target population, and the second dose of 12% of the target population (Ministry of Health of the Republic of Indonesia, 2021). The low vaccination rate may be due to doubts and hoax news circulating in the community, causing some people to be reluctant to vaccinate (Ministry of Health of the Republic of Indonesia, 2021).

The severity of Covid-19 patients

Of the 92 respondents, 54 (58%) patients had severe symptoms. Research by Zhang et al.

(2022) showed that patients who had a history of not being vaccinated had a moderate to severe risk of severity, even though none of the respondents who had not been vaccinated showed mild symptoms. Another study by Hu et al. (2022) showed that the non-vaccinated group had more severe symptoms than those who had been given the first or complete dose. The severity of symptoms in patients infected with Covid-19 varies greatly from asymptomatic to critical illness with deadly complications (Li et al., 2021). Several studies have suggested that several factors may be responsible for the severity of Covid-19, such as unvaccinated, hypertension, diabetes, and smoking (Rodriguez-Morales et al., 2020). Butt et al. (2022) conducted a cohort study of people with Covid-19 in Qatar concluding that infection with the Delta variant of SARS-CoV-2 was associated with more severe illness, and not being vaccinated was associated with a greater likelihood of critical illness.

Relationship between vaccination status and severity of Covid-19 patients

The results of this study indicate a relationship between vaccination status and the severity of Covid-19 (p = 0.000) with an OR value of 65.1 which means that individuals who are not vaccinated have a moderate to the severe chance of 65.1 times compared to those who have been vaccinated. Research conducted by Zhang et al (2022) showed that all unvaccinated patients had severe symptoms, and 17.8% of vaccinated patients had mild symptoms. Dyer (2021) argues that people who have not been vaccinated have an 11 times higher risk of being hospitalized than those who have received the first or second dose of the vaccine. Fisman et al (2022) also stated that the risk of infection was significantly higher among unvaccinated persons than among vaccinated persons. The contribution to infection among those vaccinated decreased from 15% to 10% and among those who were not vaccinated increased from 62% to 79% (Fisman et al., 2022). The body of a person who has been injected with the vaccine will stimulate antibodies to learn and recognize the weakened virus. Thus, the body will be exposed to the virus and reduce the risk of exposure (Ministry of Health of the Republic

of Indonesia, 2021). With an immune condition that has recognized the virus, if a person's immune system is defeated and then exposed, the impact or symptoms of the virus will be weakened (Ministry of Health of the Republic of Indonesia, 2021).

A study conducted in Malaysia comparing the number of deaths of 20,823 cases with vaccination status showed that there was a significant difference between Covid-19 patients who died not being vaccinated as much as 43.2 times the age standard death rate per 100,000 population compared to those who were fully vaccinated with a p-value ≥ 0.05 (Abdul Taib et al., 2022). Research by Al Kaabi et al. (2021) conducted in the United Arab Emirates and Bahrain using the Sinopharm vaccine involving 40,382 participants randomized to receive at least 1 dose of 2 vaccines showed that there was effectiveness of 72.5% to 77.8 in individuals who had been completely vaccinated. Further Al Kaabi et al. (2021) concluded that the SARS-CoV-2 vaccine significantly reduced the risk of Covid-19 symptoms (95% CI = 90-97%; P <0.001).

Different research results are shown by research conducted by the Health Research and Development Agency (Badan LITBANGKES) involving 71,455 health worker respondents in the April-June 2021 period in DKI Jakarta which shows that health workers who are confirmed positive have almost no difference between those who have been vaccinated with dose 1 (4,02%) with 2 (5,03%). Likewise, the prevalence of the level of care in health workers who were vaccinated with the first dose and those not vaccinated there was no different, namely 0.31% and 0.35%, respectively. However, it is much lower for health workers who have been vaccinated at 0.17%. This also occurred in the mortality rate, there was no difference between unvaccinated and partially vaccinated (0.03%). However, health workers who are fully vaccinated have a very low mortality rate of 0.003%.

CONCLUSION

It can be concluded that:

1. Most of the respondents are men over 50 years old, work as self-employed, and the most comorbid is diabetes mellitus.
2. Respondents who have not been vaccinated are 64 (69.6%) patients.
3. Respondents with severe illness symptoms are patients who have not been vaccinated (54 people).
4. There is a relationship between vaccination status and the severity of Covid-19 (p = 0.000).

RECOMMENDATION

Based on the results of the study, it is recommended for people who have not been vaccinated to immediately vaccinate at the nearest vaccine service unit. Health service providers are expected to continue to provide education regarding invitations to participate in vaccines facilitated by the government.

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ORIGINAL RESEARCH

THE EFFECT OF PURPLE SWEET POTATO (IPOMOEA BATATAS) ON ELEVATED HEMOGLOBIN LEVELS IN PREGNANT WOMEN MID AND LATE PREGNANCY IN A WORKING AREA TABIR LINTAS HEALTH CENTER MERANGIN DISTRICT

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ABSTRACT	Keywords
The occurrence of anemia in Tabir Lintas Health Center from January to August, the cumulative number of pregnant women is 88, with only 51 examined, and 37 pregnant women who have not been tested for hemoglobin. The purpose of this study is to determine the effect of purple sweet potato (Ipomoea Batatas) on increasing hemoglobin levels in pregnant women in the second and third trimester in the working area of Tabir Lintas Health Center in Merangin district in 2023, the study design is a quasi-experimental with one group pretest-posttest design, the total sample size was 20 pregnant women, data collection was done using observation sheets, and data analysis was done using t-tests. According to the study results, the mean hemoglobin levels before administration of purple sweet potato (Ipomoea Batatas) were 8.8 gr/dl at the lowest, 10.4 gr/dl at the highest, 10.6 gr/dl at the lowest and 11.8 gr/dl at the highest. In conclusion of the study results, the effect of purple sweet potato (Ipomoea Batatas) on hemoglobin levels of Trimester II and III pregnant women had a p-value of $0.000 < (0.05)$. It is hoped that midwives counseling and using purple sweet potato during pregnancy as an alternative means of increasing hemoglobin levels in pregnant women will increase mothers' knowledge and insight in the prevention and treatment of anemia.	*Hemoglobin, Purple Sweet Potato, Pregnancy*

INTRODUCTION

Maternal mortality is a global health issue that serves as an indicator of the success of maternal health programs as well as a measure of the extent of public health According to the World Health Organization (WHO) in 2019, an estimated 303,000 maternal deaths worldwide, or about 216/100,000 births (Paridah Y et al., 2021).

According to WHO data, maternal deaths in developing countries are caused by anemia during pregnancy in 40%, eclampsia in 34%, disease in 26%, and infectious diseases in 12% (Paridah Y et al., 2021).

The number of maternal deaths collected from the records of the Family Health Program of the Ministry of Health has been increasing every year. In 2021, there were 7,389 deaths in Indonesia. This figure represents an increase compared to 4,627 deaths in 2020. Based on cause, the majority of maternal deaths in 2021 were related to COVID-19 2,982, hemorrhage 1,330, and hypertension during pregnancy 1,077 (Kementerian Kesehatan RI, 2022).

Worldwide, the prevalence of anemia in pregnant women is 41.8%. About half of the incidence of anemia is due to iron deficiency. The prevalence of anemia in pregnant women in Africa is 57.1%, 48.2% in Asia, 25.1% in Europe, and 24.1% in the United States (Ramadhini D & Dewi SSS, 2021).

The prevalence of anemia in pregnancy in Indonesia in 2019 was 48.9%, this figure is considerably higher and increased compared to Riskesdas results of 37.19% in 2013. Anemia in pregnancy, the most common form of anemia in Indonesia, is caused by iron deficiency, which is 62.3% and can lead to miscarriage, premature delivery, uterine inertia, prolonged delivery, and uterine atony, which can cause bleeding and shock. The effects of iron deficiency anemia in pregnant women are said to be 12-28% fetal mortality, 30% perinatal mortality, and 7-10% neonatal mortality (Ramadhini D & Dewi SSS, 2021).

According to data from the Merangin District Health Center in 2022, there were 1540 cases of anemia in all working areas of the Health Center in Merangin District (Dinkes Merangin, 2022).

Anemia is defined as a maternal hemoglobin (Hb) level of less than 12gr%. While anemia in pregnancy is the condition of the mother with hemoglobin levels below 11 g% in the first and third trimesters or <10.5 g% in the second trimester. The most common anemia in pregnancy is anemia due to iron deficiency due to a lack of iron intake in food. Impaired absorption, increased need for iron or because too much iron comes out of the body, for example in bleeding (Priyanto S et al., 20202)

According to initial survey data from researchers on the occurrence of anemia at the Tabir Lintas Health Center, from January to August, the cumulative number of pregnant women was 88, only 51 were examined, there were 8 cases of pregnant women, and 37 pregnant women were not checked for hemoglobin (Puskesmas Tabir Lintas, 2022). Purple sweet potatoes may be given to pregnant women as an ingredient to increase hemoglobin levels. Sweet potatoes (Ipomoea Batatas) are herbaceous plants that grow underground and produce tubers (Tombokan SGJ et al., 2021).

In line with the study conducted by Yuliandani et al. (2017) on the effect of sweet potato consumption on hemoglobin levels in pregnant women in the third trimester of pregnancy, the results show that sweet potato consumption has an effect on the increase of hemoglobin levels in pregnant women, indicated by a p-value of 0.000 (Yuliandani et al., 2017).

The study stated that sweet potato is one of the crops that could be developed to diversify food consumption, and that it is a type of tuber that is relatively resistant to storage, and the longer it is stored, the sweeter it becomes. Since sweet potatoes contain 4 mg of iron in 100 g, the use of sweet potatoes can increase the hemoglobin concentration in red blood cells, prevent anemia, and can be consumed by pregnant women (International Labour Organization, 2013; Syarfaini et al., 2017; Widowati S, 2011).

Based on this background, the researchers are interested in conducting a study entitled "Effect of Purple Sweet Potatoes (Ipomoea Batatas) on Increased Hemoglobin Levels in Trimester II and III Pregnant Women in the Work Area of Tabir Lintas Health Center, Merangin District, 2023".

METHOD

This study aims to analyze the effect of giving purple sweet potatoes (ipomoea batatas) to increase hemoglobin levels in pregnant women in the work area of Tabir Lintas Health Center, Merangin District in 2023. The population of this study is all 20 pregnant women with anemia. The sampling technique for this study was total sampling. The dependent variable is giving sweet potatoes to pregnant women and the independent variable is increasing the hemoglobin concentration of pregnant women. Data were collected using observation sheets and analyzed using univariate and bivariate analysis.

RESULTS

Table 1 Characteristics of Respondents

Characteristics of Respondents	f	%
1. Age		
20-30 th	15	75
< 20 th or >35th	5	25
2. Gestational Age		
Trimester II	10	50
Trimester III	10	50
3. Hemoglobin levels		
Mild Anemia	20	100
Moderate Anemia	0	0
Severe Anemia	0	0
Total	20	100,00

Based on table 1, the results show that the age of the most respondents is 20-30 years with 15 respondents (75%) and the least age is> 35, namely 2 respondents (10%) Respondents in Trimester II and III are both 10 respondents (50%). All respondents experienced mild anemia as much as 100%

Table 2 Average Hemogloblin Levels of Pregnant Women Before and After Giving Purple Sweet Potato (Ipomoea Batatas) 1.

Category	N	Mean	Standar Deviasi	Min	Max	ρ-value
Pre-test	20	9.7	0.48	8.8	10.4	0.000
Post-test	20	11.2	0.34	10.6	11.8	

Table 2 shows that the mean hemoglobin value of pregnant women before giving purple sweet potato (Ipomoea Batatas) is 9.7gr/dl, standard deviation is 0.4824, and the lowest hemoglobin value is 8.8gr/dl. 8gr/dl, the highest hemoglobin value was 10.4gr/dl, and after feeding purple sweet potato (Ipomoea Batatas) the mean value was 11.2gr/dl, standard deviation was 0.3387, the lowest hemoglobin value was 10.6gr/dl and the highest hemoglobin value was 11.8gr/dl. Statistical tests with paired simple T-test analysis showed a p-value = 0.000 < 0.05,

meaning that purple sweet potato (Ipomoea Batatas) affects hemoglobin levels in pregnant women in the second and third trimesters of pregnancy.

Table 3 Effect of Purple Sweet Potato (Ipomoea Batatas) on Hemogloblin Levels in Trimester II and III Pregnant Women

Hemogloblin Levels	Purple Sweet Potato		p-value
	Before	After	
Mild Anemia	20 (100%)	4 (20%)	0.000
Not anemia	0(0%)	16(80%)	

Table 3 shows that 20 (100%) respondents experienced mild anemia before giving purple sweet potato stew, and after giving purple sweet potato, 4 (20%) had mild anemia and 16 (80%) had no anemia, with a p-value of 0.000 < 0.05, which means that in 2023, the Merangin District Tabir Lintas Health Center In the working area, it means that the effect of giving purple sweet potatoes (Ipomoea Batatas) to increase hemoglobin levels in pregnant women in Trimester II and III.

DISCUSSION

Characteristics of Respondents

The study population consisted of all pregnant women who experienced anemia in the Tabir Lintas Health Center, a total of 20 individuals, who met the inclusion and exclusion criteria. Based on Table 1, it was found that the highest number of respondents were between 20 and 30 years of age, i.e. 15 (75%), and the lowest number of respondents were over 35 years of age, i.e. 2 (10%). All respondents experienced mild anemia about 100% of the time. Both the second and third trimester had 10 respondents (50%), indicating that the distribution of pregnant women is balanced between the second and third trimester.

Research from Dewi (2021) Anemia in pregnancy can be influenced by the gestational age factor. According to Tadesse, et al in Padmi stated that pregnant women in the first trimester are twice as likely to experience anemia than in the second trimester. Meanwhile, pregnant women in the third trimester are almost three times more

likely to experience anemia than in the second trimester (Dewi HP & Mardiana, 2021). In line with Research by Herawati (2018) Judging from the frequency of the ages of pregnant women 20-35 years, many experience anemia. The results of this study are in accordance with the results of a study conducted by Lulu, in which visitors to antenatal care at the Pasar Minggu District Health Center, South Jakarta, stated that there was no significant difference between the ages of mothers aged <20 years and >35 years and mothers aged between 20-35 years (Herawati Y & Rusmiati D, 2019).

Gestational age affects anemia, increasing gestational age is caused by physiological changes in pregnancy that begin at the 6th week, namely an increase in plasma volume and reaches a peak at the 26th week resulting in a decrease in Hb levels (Herawati Y & Rusmiati D, 2019). In addition, as the physiological age of pregnancy increases, mothers who are approaching delivery will tend to experience stress which results in a lack of appetite so that poor nutritional intake can be one of the factors causing anemia. Pregnant women in the third trimester of pregnancy are almost three times more likely to experience anemia. anemia than in the second trimester. Anemia in the third trimester can be caused by the increased need for nutrients for fetal growth and the sharing of iron in the blood to the fetus which will reduce the mother's iron reserves (Dewi HP & Mardiana, 2021)

Reproductive age is still experiencing ovulation, ovulation that is not fertilized will become menstruation. During the menstrual process, every woman will bleed an average of 33.2 ± 16 cc in one cycle so that if not supported by good nutrition it can cause anemia (Herawati Y & Rusmiati D, 2019).

According to the researchers' assumptions, the age of the mother who experienced anemia was the age of the majority of respondents who were 20-30 years old with 15 respondents (75%). The recommended reproductive age is 20-35 years old. Because at reproductive age they are still ovulating, ovulation that is not fertilized will become menstruation. In the process of menstruation, every woman will bleed in one cycle so that if it is not supported by good nutrition it can cause anemia. In the

second and third trimesters of pregnancy, the frequency of anemia is the same, in the second and third trimesters the nutritional needs of pregnant women are increasing, if not accompanied by balanced nutrition it causes anemia.

2. Average Hemogloblin Levels of Pregnant Women Before and After Giving Purple Sweet Potato (Ipomoea Batatas)

The results showed that the mean hemoglobin level of pregnant women before being given Purple Sweet Potato (Ipomoea Batatas) was a mean value of 9.7gr/dl, with the lowest hemoglobin level being 8.8 gr/dl and the highest hemoglobin level being 10.4gr/dl, after being given Purple Sweet Potato (Ipomoea Batatas) to a mean value of 11.2 gr/dl, with the lowest hemoglobin level being 10.6 gr/dl and the highest hemoglobin level being 11.8 gr/dl. Statistical tests showed that there was an effect of giving purple sweet potato to hemoglobin levels in Trimester II and III pregnant women with a p value <0.001.

The results of this study are the same as the research conducted by Ramadhini, 2021 on 10 pregnant women, it was found that 7 pregnant women had anemia, consisting of 6 people with mild anemia (hemoglobin level between 8-11 gr%) and 1 mother had moderate anemia (hemoglobin level 7.8 g%) (Ramadhini D & Dewi SSS, 2021). The reason pregnant women experience anemia is due to their irregular eating patterns and the food menu served is sober. This is because the economic situation is not adequate while the prices for all necessities are expensive, Fe tablets are consumed irregularly and pregnant women check their pregnancies only because they have complaints such as dizziness, nausea, not based on the Antenatal Care (ANC) schedule. In line with the study of Tombokan et al (2021), it can be concluded that purple sweet potato has an effect on increasing the hemoglobin of third-trimester pregnant women at the Ranomut Health Center in Manado City, and can meet the iron needs of pregnant women during pregnancy. Iron is needed in the formation of hemoglobin, so if the body lacks iron it will inhibit the formation of hemoglobin. As a result, the formation of red blood cells is inhibited

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resulting in anemia. The way to overcome iron deficiency in the body is by consuming 6.3 mg of Fe per day and increasing intake of food sources of Fe (Tombokan SGJ et al., 2021).

According to Manuaba, anemia is relatively common in pregnancy because pregnant women experience hemodelution (dilution) with an increase in volume of 30% to 40%, which peaks at 32 to 34 weeks of gestation. The amount of increase in blood cells is 18% to 30% and hemoglobin is around 19% (Priyanto S et al., 20202).

Iron is a mineral that the body needs for the formation of red blood cells (hemoglobin), iron also plays a role as a component in forming myoglobin (a protein that carries oxygen to muscles), collagen (a protein found in bone, cartilage and connective tissue), as well as enzymes. Iron also functions in the body's defense system, how to overcome iron deficiency in the body by consuming 6.3 mg Fe/day and increasing intake of food sources of Fe (Tombokan SGJ et al., 2021). Sweet potatoes have high nutritional value, rich in vitamins and minerals. Consumption of sweet potatoes has an effect on increasing hemoglobin levels in pregnant women, and is able to increase hemoglobin levels in pregnant women after being given sweet potatoes as much as 0.58%. Sweet potato contains 0.61 mg of iron in 100 grams so that the use of sweet potato can be consumed by pregnant women to increase hemoglobin levels in red blood cells, can prevent and treat anemia because it is rich in iron (Sinaga R et al., 2020).

According to the researchers' assumptions, anemia that occurs in pregnancy is caused by a lack of iron intake by the body, coupled with the body's response during pregnancy to blood dilution which causes a decrease in hemoglobin levels in pregnant women. If this is not overcome by increasing consumption of iron, it will be fatal to the mother and the baby in the mother's womb. Purple sweet potatoes contain lots of vitamins and minerals, especially iron, which is needed to form hemoglobin. In addition, purple yams contain vitamin C which can increase iron absorption in the body, so if we consume purple yams, the process of absorption of iron in purple yams will be more easily absorbed by the body which causes sufficient iron in the body so that the mother's hemoglobin level increases. pregnant can increase.

3 Effect of Purple Sweet Potato (Ipomoea Batatas) on Hemoglobin Levels of TMT II and III Pregnant Women

The results showed that before being given purple sweet potato stew as many as 20 respondents (100%) experienced mild anemia while after being given purple sweet potato, 4 respondents (20%) had mild anemia and 16 respondents (80%) were not anemic. Statistical tests showed that there was an effect of purple sweet potato (Ipomoea Batatas) on increasing hemoglobin levels of pregnant women in the second and third trimesters with a p value <0.001.

In line with the research conducted by Tombokan, 2021 from the results of the independent test sample t test, the sig value was obtained. (2-tailed) of 0.000<0.05. So it can be concluded that there is a difference in the average hemoglobin level of 12.2 in the intervention group after consuming purple sweet potato. Thus it can be concluded that, there is an effect of purple sweet potato on increasing the hemoglobin of third trimester pregnant women at the Ranomut Health Center in Manado City, and being able to meet substance needs (Tombokan SGJ et al., 2021).

According to Varney, anemia occurs during pregnancy because the mother's total blood volume increases by around 30-50% in single pregnancies and 50% in twin pregnancies. Total blood volume is a combination of plasma volume which increases 70% and red blood cell volume which also increases 33% from pre-pregnancy values. All of this causes hemodilution which is seen at low hematocrit levels which is known as physiological anemia in pregnancy and often occurs at 24-24 weeks of gestation. 32 weeks. The increase in total blood volume begins at the beginning of the first trimester, then increases rapidly until mid-pregnancy and then slows down towards the 32nd week (Yuliandani FA et al., 2017).

According to the assumption of the researchers, the increase in hemoglobin levels occurs because purple sweet potatoes contain lots of vitamins and minerals, especially iron, which is needed to form hemoglobin. In addition, purple yams contain vitamin C

which can increase iron absorption in the body, so if we consume purple yams, the process of absorption of iron in purple yams will be more easily absorbed by the body which causes sufficient iron in the body so that the mother's hemoglobin level increases. pregnant can increase. Purple sweet potato is very easy to obtain in rural areas, besides that consumption of purple sweet potato does not cause nausea, dizziness and constipation, so it is very suitable for iron fulfillment in pregnant women. There are still 4 people with hemoglobin levels that are still below normal, due to research limitations, namely the intervention was only carried out for 7 days. It is expected that pregnant women will continue to consume purple sweet potatoes, so that they do not experience anemia.

CONCLUSIONS

There is an effect of purple sweet potato (Ipomoea Batatas) on the hemoglobin level of pregnant women in the second and third trimesters. It is expected that midwives will provide counseling, increase knowledge and insight of mothers in preventing and treating anemia by using purple sweet potato in pregnancy as an alternative to increase hemoglobin levels in pregnant women.

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ORIGINAL RESEARCH

ANALYSIS OF NURSING CARE IN PATIENTS WITH SENSORY PERCEPTION DISORDERS THROUGH APPLICATION OF THERAPY THOUGHT STOPPING

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ABSTRACT	Keywords
Schizophrenia is a serious mental disorder that can affect individual thoughts, feelings and behavior. Schizophrenia is part of a psychotic disorder that is primarily characterized by loss of understanding of reality and loss of self-view. Thought stopping is one of the cognitive behavioral psychotherapy techniques that can be used to help clients change their thought processes. Sources of data obtained using primary and secondary data, primary data obtained using interviews with respondents, while secondary data related to case studies obtained from medical records.The subjects of this case study were schizophrenic patients with sensory perception disorders at Prof Dr Soerojo Psychiatric Hospital, with the number of case study subjects 3 patients who experience sensory perception disorders. The instrument is a measuring tool to measure what will be measured. The instrument for this case study method uses the PYSRAT (Psychotic Symptom Rating Scale). The nursing actions applied to three schizophrenic clients with sensory perception disorders in this case study focused on the application of thought stopping. The intervention was carried out 3 times with a duration of 10-15 minutes at each visit. Based on the application that has been done on clients, it is known that thought stopping can help reduce signs and symptoms and control sensory perceptual disorders. The results of sensory perception get better.	*Schizophrenia, Sensory Perception Disorders, Thought Stopping*

INTRODUCTION

Schizophrenia is a severe mental disorder that can affect individual thoughts, feelings and behavior. Schizophrenia is part of a psychotic disorder that is primarily characterized by loss of understanding of reality and loss of self-view. This disease is chronic and debilitating compared to other mental disorders, the likelihood of recurrence in individuals who have schizophrenia and who have been treated is 50-80% with a life expectancy of 10 years shorter than patients with other mental disorders. Schizophrenia is a functional psychosis with major disturbances in thought processes and disharmony between thought processes, affect, or emotions.

Schizophrenia is a syndrome consisting of various causes and course of the disease. The interaction between genetics and the environment plays a major role in the emergence of schizophrenia (Yudhantara & Istiqomah, 2018).

Disorders of sensory perception are changes in perception of both internal and external stimuli accompanied by reduced, excessive or distorted responses.

Hallucinations are one of the symptoms of mental disorders in which the patient experiences changes in sensory perception, feels false sensations in the form of sound, sight, taste or touch. The patient feels a stimulus that is not actually there. The symptoms or behaviors that often occur in patients with mental disorders are related to hallucinations, namely talking to themselves, smiling to themselves, laughing to themselves, staring at a point, fast eye movements, trying to avoid other people, can't tell which one is which. real and unreal, not infrequently also people with mental disorders do not want to bathe and have strange behavior (PPNI, 2018).

METHOD

The subjects of this case study were schizophrenic patients with sensory perception disorders at Prof Dr Soerojo Psychiatric Hospital with the number of case study subjects 3 patients who experience sensory perception disorders. The instrument is a measuring tool to measure what will be measured.

The instrument for this case study method uses the PYSRAT (Psychotic Symptom Rating Scale) to measure hallucination symptoms, there are 11 items. Using a Likert scale (0-4), a Likert scale (0=none, 1=mild, 2=moderate, 3=severe, 4=very severe). The range of hallucination questionnaire scores is 0-44, if the score is smaller then there will be a decrease in hallucination symptoms. Sources of data obtained using primary and secondary data, primary data obtained using interviews with respondents, while secondary data related to case studies obtained from medical records (Erawati, E., Keliat, B.A & Daulima, 2014).

RESULTS

The assessment of three schizophrenic patients with sensory perception disorders showed that predisposing factor for clients is that there are no biological factors that cause the client to experience mental disorders. The client finds out that the client's father is having an affair with his aunt and the client's mother has died. The client's relative's house is attached to the client's house. the precipitation factor is the problem with the client arises due to external factors. The client is experiencing drug withdrawal. Stressors have started to occur since 2017 and occur repeatedly. The patient appearance is untidy, the veil is not neat, the hair is limp, the face is dirty, the face sometimes looks tense, the client's speech is unstable and rambles, the client swears. Time disoriented clients. When examined the client is unable to answer the date and year. When hearing voices, clients often expel by tapping both ears. Clients sometimes talk to themselves and laugh alone. The client's second predisposing factor is that there are no biological factors, the client works as a housewife, and feels ashamed because people think she's crazy. The precipitating factor is that the client does not want to take medication because he feels that he has recovered. Recurrence occurs in the morning, afternoon or evening. Stress has occurred since 2018, and occurs when clients feel alone and daydreaming. The client's appearance is quite neat, the body looks clean, the view is easy to switch. When interacting with cooperative clients, affect is unstable. When angry, the client is unable to express his anger in a good way. Clients tend to get angry, tense faces, sharp eyes, and damage things around their environment. This shows the client's coping mechanism, namely displacement.

The nursing diagnosis is sensory perception disorder associated with psychological stress as evidenced by hearing whispered voices, sensory distortions, inappropriate responses, acting as if they heard something, expressing annoyance, being alone, daydreaming, pacing back and forth, talking to himself.

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The nursing actions applied to three schizophrenic clients with sensory perception disorders in this case study focused on the application of thought stopping. The intervention was carried out 3 times with a duration of 10-15 minutes at each visit. Anger response rates were measured using the Psychotic Symptom Rating Scale questionnaire before and after thought stopping was performed on the client. Based on the application that has been done on clients, it is known that thought stopping therapy can help reduce signs and symptoms and control sensory perceptual disorders. This is evidenced by a decrease in angry responses and signs of sensory perceptual disturbance symptoms.

Implementation carried out on Mrs. A, the results of the client's response were obtained after the thought stopping action was carried out, namely verbalization of hearing a whisper decreased enough, concentration increased enough, pacing decreased. Mrs. A also decreased the questionnaire score from 29 to 18, which means there was a decrease in signs and symptoms of sensory perception disorders. The responses that appeared to Mrs. N after the thought stopping therapy was carried out, namely verbalization hearing whispers decreased quite a bit, pacing decreased, responses according to stimulus increased quite a lot, concentration increased. There was a decrease in the questionnaire score from 27 to 16, which means there was a decrease in signs and symptoms of sensory perception disorders. At Mrs. E after the implementation of thought stopping the pacing has decreased considerably, the verbalization of hearing a whisper has decreased considerably, the hallucinatory behavior is moderate. The questionnaire score obtained by Mrs. E experienced a decrease in scores from 29 to 17, which means that there is a decrease in signs and symptoms of sensory perception disorders (PPNI, 2019).

Which means that sensory perception getting better.

DISCUSSION

The study conducted on three schizophrenic clients with sensory perception disorders showed that the causes of hallucinations for the three clients were different. This is caused by two factors, namely predisposition and precipitation which triggers the client to experience sensory perception disorders. Precipitating factors that cause a person to experience sensory perception disorders can arise due to stressors both originating from oneself and the environment (Ahmad, 2015).

In the psychosocial assessment, the results of the three clients showed that the three clients had no family history of mental disorders. The genetic factor itself has a function to convey information to the next generation as well as a determinant of inherited traits (Hermiati, 2018).
In addition, the precipitating factors that cause a person to experience sensory perception disorders are a history of previous mental disorders and adherence to taking medication. The results of the study showed that all of the three clients had a previous history of mental disorders. The three clients re-entered due to stopping taking medication. There are several conditions that cause clients to be non-compliant with taking medication, including a lack of understanding of the purpose of treatment, a lack of understanding about the importance of following medication rules, difficulty getting medication (Somana, 2018).

Signs and symptoms of sensory perception disorders that appeared in the three patients after the assessment were patient pacing back and forth, talking to themselves, laughing to themselves, tense faces, swearing. According to PPNI, (2017). there are major and minor symptoms that appear in clients with impaired sensory perception. Major symptoms include the client's subjective

hearing of whispering voices or seeing shadows, while objective data such as sensory distortions, inappropriate responses, acting as if they see, hear, taste, touch or smell. Minor symptoms, namely expressing annoyance, being alone, daydreaming, poor concentration, disorientation in time, place, person and situation, suspicious, looking in one direction, pacing, talking to himself.

Disturbance of sensory perception received by the five senses without any external stimulus. Clients with hallucinations often feel circumstances or conditions that can only be felt by them but cannot be felt by other people. Impaired sensory perception is influenced by two factors, namely predisposing factors and precipitation factors. Predisposing factors are factors that affect the function of the type and amount of resources that can be generated by individuals to deal with stress. Predisposing factors include developmental, sociocultural, biological, psychological and genetic factors. Precipitation factors are stimuli that are prepared by individuals as challenges, threats, or demands that require extra energy to deal with, in which there are behaviors such as low self-concept, hopelessness, loss of motivation, inability to spiritual needs (Maudhunah, 2020).

Research is in line with Ferdinanda, (2022), which states that the author teaches specialist nursing therapy, namely thought stopping sessions 1 and session 2, namely identifying disturbing thoughts and practicing stopping disturbing thoughts with regular counts and the client can do it independently so that it is continued to the second session, namely stopping disturbing thoughts with regular counts and clients can do them with regular counts and clients can practice also with varied counts. After sessions one and two have been trained then the nurse conducts subjective and objective evaluations.

Thought stopping is an application in patients with sensory perception disorders that aims to control auditory hallucinations by stopping thoughts. This opinion is reinforced by Twistiandayani, (2018) showing that before thought stopping was given to patients, the ability to control hallucinations was still lacking, while after thought stopping the hallucination ability was good, which means that there was an effect of thought stopping on the ability to control hallucinations in schizophrenic patients.

According to research by Agustya et al (2022) it showed that patients were able to repeat thought stopping and it was found that respondents rarely heard voices and had started to be able to change negative thoughts to positive ones, patients also understood the techniques that had been taught. Research in line with Ambo (2023) shows that after being given thought stopping, patients can express positive things about themselves, respondents do not often look down, eye contact has started to exist. Respondents have started interacting with researchers after thought stopping has been carried out because through this therapy respondents have been able to stop negative thoughts so that they become more positive thoughts, thus increasing the respondent's thinking ability as a result there is a decrease in symptoms of sensory perception disorders.

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CONCLUSIONS

The assessment of the three patients was carried out using Stuart stress adaptation models. The nursing diagnoses that emerged from the assessment of the three patients based on Kandar & Iswanti (2019), namely sensory perception disorders related to psychological stress as evidenced by hearing whispering sounds, sensory distortions, inappropriate responses, acting as if they heard something, expressing annoyance, being alone, daydreaming, pacing, talking alone. The expected results are decreased verbalization hearing whispers, decreased hallucinatory behavior, decreased pacing,

increased responsiveness to stimulus, increased concentration.

Implementation of nursing carried out on the three patients, namely monitoring behavior that indicates hallucinations, monitoring the content of hallucinations, maintaining a safe environment, teaching relaxation distraction. The results that sensory perception getting better.

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ORIGINAL RESEARCH

RELATIONSHIP CHARACTERISTICS AND COMMUNITY BEHAVIOR WITH THE INCIDENCE OF SCHISTOSOMIASIS IN THE WORK AREA OF WUASA COMMUNITY HEALTH CENTER IN 2022

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ABSTRACT	Keywords
Schistosomiasis is a zoonotic disease and a public health problem. The cause is a type of worm parasite from the schistosomatidae family which has a habitat in the blood vessels around the intestines or bladder. Schistosomiasis is a parasitic disease caused by blood trematode worms of the genus Schistosoma. Chronic schistosomiasis can reduce the ability of sufferers to work, and in some cases cause death. This study aims to get an overview of the factors that cause recurrent schistosomiasis or reinfection that occurs in the community. Descriptive correlation with the analytic case control study approach, namely retrospective observational analytic research where effects or outcomes are traced back to identify relationships by comparing cases and controls. Sampling in this study were patients who were infected with schistosomiasis as case respondents and those who were not infected with schistosomiasis as control respondents. There is a relationship between the behavior of the community or respondents who are often active in rivers or ditches, often passing through conch focus areas and not utilizing health service facilities with the incidence of respondent schistosomiasis in the community in North Lore District, Poso Regency, Central Sulawesi Province. Conversely, there is no relationship between the characteristics of the respondents which include age, gender, education level, marital status and employment with the incidence of schistosomiasis. Conclusion, the habitual behavior of respondents who often move in the river is related to the incidence of disease schistosomiasis, so that it can be concluded that the main factor causing someone to suffer from schistosomiasis is not due to the characteristics of the respondents in the community in North Lore sub-district, Poso Regency, Central Sulawesi Province.	*Characteristics, Behavior, Risk factors, Schistosomiasis*

INTRODUCTION

A person's health status and quality of life are not only influenced by the health itself but also by the individual's lifestyle, so it is important to understand that health status is not only maintained and enhanced by advances in science and technology in the field of health sciences but through lifestyle, environment and conditions. the surrounding community. There are two fundamental factors that affect a person's lifestyle, namely internal factors in the form of physical and psychological and external factors such as social culture, behavior, genetics and population which also influence the health status of individuals, families, groups and

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communities. The interaction of individual life in the family and society which is so complex can cause various problems, both social and health or disease. There are so many diseases that arise due to contact with the environment, but sometimes individuals, families or communities do not realize that these conditions are common in society without understanding that the impact of diseases that arise can endanger life safety. One disease which is a complex phenomenon and is still a health problem that affects the life of a community is Schistosomiasis (Kadek et al, 2023; Rasiman & Sampali, 2019; Mahmud et al, 2016; Nurwidayati et al, 2018; Rosmini et al, 2016).

Schistosomiasis or Bilharziasis is a parasitic disease that is included in the Neglected Disease (disease of less attention) and is considered a disease related to poverty, especially in tropical areas, including Indonesia. Schistosomiasis is a parasitic disease caused by blood trematode worms of the genus Schistosoma. These worms live in the veins of humans and mammals in several tropical and sub-tropical regions. For its survival requires an intermediate snail. The larval form of the parasite is released from the intermediate snail, piercing the skin of the person in contact with the water. Chronic schistosomiasis can reduce the ability of sufferers to work, and in some cases cause death. In children, schistosomiasis causes stunting, anemia and decreased learning ability (Akbar, 2019); Veridiana & Chadijah, 2013).

According to WHO, schistosomiasis is spread throughout the world and transmission of the disease has been reported in 78 countries (WHO, 2017; WHO 2012). So far, schistosomiasis endemic areas in Indonesia have only been found in the Napu and Bada highlands in Poso Regency and the Lindu highlands in Sigi Regency, Central Sulawesi Province. The prevalence of Schistosomiasis cases in humans fluctuates every year, and tends to increase every year even though the figure is not more than 2%. This fluctuation was due to Schistosomiasis reinfection, people who had been infected and given medication returned to their activities in the focus area of the snail spread (Delaprilyant et al, 2018).

Etiologically, schistosomiasis in Indonesia, especially in the highlands of Napu, is a type of worm, namely Schistosoma japonicum, while the intermediate host as the vector of transmission is the snail oncomelania hupensis lindoensis. The survival of the oncomelania snail is greatly supported by a habitat with a suitable climate and environment. In several habitats where oncomelania snails are found, they are also influenced by temperature conditions, soil type, vegetation type, as well as the adequacy of water that supports the development of snails and also the movement of cercariae (Zhang et al. 2005). Epidemiologically, the transmission of schistosomiasis cannot be separated from human behavior or habits (Erlan et al, 2020).

In general, schistosomiasis sufferers are those who have a habit that cannot be separated from water. Frequent contact with waters or entering infected waters causes an increase in schistosomiasis sufferers in the community. Community behavior in supporting or preventing disease transmission is strongly influenced by various characteristics of the community itself such as knowledge, work, behavior, perceptions and attitudes.

The data obtained from the Central Sulawesi Provincial Health Office fluctuated. However, from 2016 to 2019 it has fallen below 0.5%. This happened because the Mass Administration of Medicines for the Prevention of Schistosomiasis (POPM) was carried out from April to October 2019 in 3 endemic areas namely Napu, Bada, and Lindu as a series of accelerated phase activities according to the ROADMAP for

schistosomiasis control which has been prepared together with cross ministries. . The management of Schistosomiasis in 2020 in humans with the Administration of Mass Prevention Drugs (POPM) for Schistosomiasis did not go according to plan due to the availability of the drug Praziquantel which was planned for 28 POPM villages which was realized in 24 villages. And in 2019 0% was not achieved because the source of transmission and vectors was not yet 0%. In 2021 there were 18 people with schistosomiasis. This data has increased because there are several problems that affect the fluctuating prevalence, including the fact that there are still many idle lands where oncomelania hupensis lindoensis snails develop, the focus area for oncomelania hupensis lindoensis snails has not been managed properly, mass treatment has not been carried out. The Schistosomiasis Control Integrated Team is not yet optimal and there is a Covid-19 pandemic so that agency programs related to the control and eradication of schistosomiasis are constrained to carry out (Nasional BPP, 2018).

Based on the description of the background above, the researcher is interested in conducting research on "the relationship between community characteristics and behavior with the incidence of schistosomiasis in the working area of the Wuasa Community Health Center in 2022".

METHOD

Design

The design of this study is descriptive correlation which aims to determine the relationship between two or more variables, with an analytic descriptive approach (case control study) namely retrospective observational analytic research in which effects or outcomes are traced back to identify relationships by comparing cases and controls. The independent variables in this study are the characteristics of the respondents and the behavior of the respondents related to the incidence of schistosomiasis.

Samples and sampling techniques

The population in this study were respondents who suffered from schistosomiasis as a case group and those who did not suffer from schistosomiasis as a control group. The number of samples in this study were 18 respondents for the case group and 18 respondents for the control group by using a sampling technique acidental sampling.

instrument

The data collection instrument used a structured questionnaire consisting of questionnaire A, which is a question about the data on the characteristics of the respondents made by the researcher himself consisting of five questions including age, gender, marital status, education level, and occupation. Questionnaire B about the behavior of respondents: the habit of doing activities in rivers or ditches, the habit of passing through focus areas, the use of healthy latrines, the use of clean water sources, the raising of livestock and the utilization of health services.

Intervention

Respondents who agreed to be the research sample were asked to fill out a consent form to become respondents, namely inform consent. Then, respondents were asked to fill out a questionnaire sheet to find out the characteristics and behavior of the community in the working area of the Wuasa Community Health Center, North Lore District, Poso Regency, Central Sulawesi Province.

Analysis Data

The method of data analysis is Univariate to see the distribution of characteristics and behavior of respondents and Bivariate analysis to see the relationship between the variables studied using the non-parameter Chi Square test.

Ethical considerations

Researchers must first ask permission for research from the City Health Office to the research location of the Wuasa Community Health Center, North Lore District, Poso Regency, Central Sulawesi Province to carry out data collection and the research process. When conducting research, researchers need to pay attention to several considerations or ethical aspects, including: anonymity, confidentially, autonomy, justice and beneficiency. The researcher asked for consent to the participation of the respondents (informed consent) before the research is done.

RESULTS

Wuasa Village, North Lore District, Poso Regency, Central Sulawesi Province is one of the areas located in the Napu Plateau. Wuasa Village is located at coordinates -1.1781548625283147 South Latitude and 120.15680819867165 East Longitude. The condition of the North Lore Subdistrict is an area with hilly and valley topography and is located at 1000 – 1200 meters above sea level. The land area in this area is not only used as a place for residential residents, but also used as agricultural land and rice fields by the community. The rest of the land area is plains and wilderness. North Lore District has 7 villages namely Alitupu, Bumi Banyusari Village, Dodolo Village, Kaduwaa Village, Sedoa Village, Watumaeta Village, and Wuasa Village.
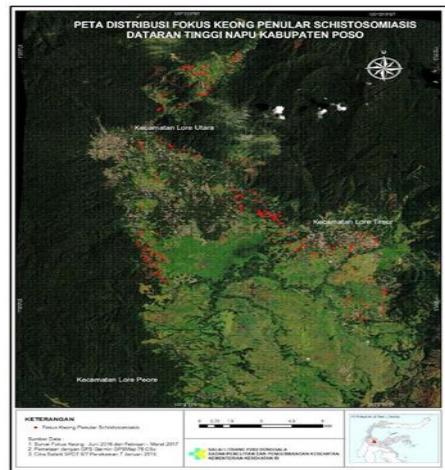

Figure 1. *Map of the Research Location of North Lore District, Poso Regency*

Table 1. Distribution of respondents based on characteristics with events disease schistosomiasis in the Work Area of the Wuasa Community Health Center in 2022

Variable	Incident Schistosomiasis			
	Yes		No	
	N	%	N	%
Age				
$\geq$39 years	9	50	10	55.6
$\leq$39 years	9	50	8	44.4
Gender				
Women	4	22.2	8	44.4
Men	14	77.8	10	55.6
Marital Status				
Not married yet	3	16.7	2	11.1
Married	15	83.3	16	88.9
Education				
Elementary school	6	33.7	-	-
Junior High School	5	27.8	4	22.2
Senior High School	7	38.9	14	78.8
Work				
Farmer	16	88.9	16	88.9
Officer	-	-	1	5.6
School children	2	11.1	-	-
Self-employed	-	-	1	5.6

Primary data source 2022

Based on table 1 above, it shows that respondents aged >39 years and those aged <39 years were balanced by 9 (50%) for the case group, and respondents in the control

group aged >39 years were 10 (55.6%) and those aged <39 was 8 (33.3%). The sex of the respondents in the case group, mostly 14 (77.8%) were male and the control group 10 (55.6%). Marital status of respondents in the case group, mostly 15 (83.3%) were married and 16 (88.9%) in the control group. The education level of the respondents who suffer from Schistosomiasis is mostly 7 (38.9%) educational background is high school and those who do not suffer from schistosomiasis 14 (78.8%) have high school education level. The work of both respondents who suffer from Schistosomiasis and do not suffer from Schistosomiasis is the same, namely the majority of 16 (88.8%) are farmers.

Table 2. Distribution of respondents based on community behavior with disease incidencev schistosomiasis in the Work Area of the Wuasa Community Health Center in 2022

Variable	Incident Schistosomiasis			
	Yes		No	
	N	%	N	%
River/trench activity				
Yes	12	66.7	5	27.8
No	6	33.3	13	72.2
Past the focus area				
Yes	18	100		
No	-	-	18	100
Toilet use				
Yes	16	88.9	18	100
No	2	11.1	-	-
Use of clean water				
Yes	15	83.3	14	77.8
No	3	16.7	4	22.2
Livestock				
Yes	15	83.3	12	66.7
No	3	17.7	6	33.3
Yankes utilization	9	50	17	94.4
Yes	9	50	1	5.6
No				

Primary Data Source

Based on table 2 above, it shows that most of the respondents for the case group 12 (33%) said that they often carried out activities in the river or ditch and most of the respondents for the control group (72.2%) did not carry out activities in the river. The habit

of passing through the Schistosomiasis focus area for all 18 (100%) case group respondents passed through the focus area and 18 (100%) control group respondents did not pass through the Schistosomiasis focus area. Use of latrines Most of the respondents in the case group 16 (88.9%) used latrines for defecation activities as well as all 18 respondents in the control group (100%) used latrines. The use of clean water for case group respondents was 15 (83.3%) using clean water sources for drinking and MCK needs, and 14 (77.8%) for the control group using clean water as a source of drinking and MCK. Raising livestock for the case group there are 15 (83.3%) respondents who raise livestock and 12 (66.7%) the control group who raise livestock, and for the variable utilization of health services for the case group there are 9 (50%) respondents who do not utilizing health services as a place for health services in the village and for the control group there was only 1 (5.6%) of respondents who did not utilize health services.

Table 3. The relationship between the characteristics of respondents and the incidence of schistosomiasis in the Work Area of the Wuasa Community Health Center in 2022

Variable	Schistosomiasis				Total	P Value	OR (95% CI)
	Yes		No				
	N	%	N	%			
Age							
≥39 years	9	50	9	50	18	1.000	1.000
<39 years	9	50	9	50	18		(0.271 -3.694
Gender							2.800
Men	14	58.3	10	41.7	24	0.289	(0.658 -
Women	4	33.3	8	66.7	12		11.923)
Marital status							0.658
Married	15	48.4	16	51.6	31	1.000	(0.091 -
Not married yet	3	60.0	2	40.0	5		4.275)

	N	%	N	%	Total	P Value	OR (95% CI)
Education	6	10	0	0	6	0.01	8.444
Elementary	5	0	4	44.	9	5	(10.80
school	7	55.	1	4	21		8-
Junior		5	4	66.			7.918)
High		33.		7			
School		3					
Senior							
High							
School							
Work							
Farmer	1	50	1	50	32	0.26	4.000
Officer	6	0	6	10	1	1	(5.545
School	0	10	1	0	2		-
children	2	0	0	0	1		0.000)
Self-	0	0	1	50			
employed							

Primary data source 2022

Based on table 3 above, it shows that the relationship between the age of the respondents and the incidence of schistosomiasis can be seen that the respondents in the case group aged ≤39 years were all 9 (50%) and those aged ≥39 years is also the same, namely 9 (50%) with p value is 1.000 and OR = 1.000 (0.271-3.694). This shows that the age of the respondent is not related to the incidence of schistosomiasis. The relationship between gender and the incidence of schistosomiasis shows that 14 (58.3%) of the respondents for the case group suffering from schistosomiasis were men with p value 0.289 stated that gender was not related to the incidence of schistosomiasis where OR=2.800 (0.658-11.923). The relationship between the marital status of the respondents and Schistosomiasis in the case group respondents were mostly married 15 (48.4%) p value 1.000 so that it can be concluded that marital status is not related to schistosomiasis where OR = 0.658 (0.091-4.275). The relationship between the education level of respondents and schistosomiasis shows that the education level of respondents in the case group 7 (33.3%) and the control group 14 (66.7%) is high school. There are differences in proportions where p value 0.015 concluded that the level of education is not associated with the incidence of schistosomiasis. The relationship between the work of the respondents and

schistosomiasis showed that most of the respondents in the case group and the control group were the same, namely 16 (50%) farmers p value 0.261 so it can be concluded that work is not related to the incidence of schistosomiasis.

Table 4. Relationship between respondent's behavior and disease incidence schistosomiasis in the working area of the Wuasa Community Health Center in 2022

Variable	Schistosomiasis				Total	P Value	OR (95% CI)
	Yes		No				
	N	%	N	%			
Activity	1	76.	5	23.	21	0.00	20.800
Yes	6	2	1	8	15	0	(3.453-
No	2	13.	3	86.			125.29
		3		7			5)
Focus							
Pass	1	64.	1	35.	28	0.00	0.357
Did not	8	3	0	7	8	3	(0.217-
pass	0	0	8	10			0.587)
				0			
Toilet							
Own	1	47.	1	52.	31	0.48	0.471
Do not	6	1	8	9	5	6	(0.329-
have	2	10	0	0			0.672)
		0					
Clean water							
Have	1	51.	1	48.	29	1.00	1.429
Do not	5	7	4	3	7	0	(0.270-
have	3	42.	4	57.			7.549)
		9		1			
Cattle							
There is	1	51.	1	48.	31	1.00	1.600
There isn't any	6	6	5	4	5	0	(0.234-
	2	40	3	60			10.945
							)
Health services	4	19	1	81	21	0.00	12.143
Utilise	1	93.	7	6.7	15	0	(1.807-
No	3	3	1				81.579
							)

Primary data source 2022

Based on table 4 above, it shows that there is a relationship between activity habits in rivers or ditches with the incidence of disease schistosomiasis it can be seen that 16 respondents (64.3%) in the case group had activities in the river or ditch and the control group 13 (86.7%) did not carry out activities in the river or ditch. The difference in this proportion is very significant as can be seen from p value 0.000 so that it can be concluded

that the habitual behavior of respondents who often do activities in the river is related to the incidence of disease schistosomiasis where OR= 20,800. Relation of habitual behavior through the focus area with the incidence of disease schistosomiasis It can be seen that 18 (76.2%) of the case group respondents and 10 (35.7%) of the control group respondents have a habit of passing through the focus area, the difference in this proportion is significant, as can be seen from p value 0.003 so that it can be concluded that the behavior of respondents who often pass through the focus area has a high chance of suffering from disease schistosomiasis with OR = 10.286 (-). The relationship between behavior has latrines with the incidence of disease schistosomiasis it can be seen that 16 (47.1%) of the case group respondents had a latrine at home and 18 (52.9%) of the control group had a latrine at home. The difference in this proportion is very significant as can be seen from p value 0.486 so that it can be concluded that the availability of healthy latrines at home is not related to the incidence of disease schistosomiasis where OR= 0.417.

Furthermore, the relationship between the behavior of using clean water and the incidence of disease schistosomiasis it can be seen that 15 (51.7%) case group respondents used clean water as a source for food and drink at home and the control group 14 (48.3%) used clean water at home. Mark p value 1,000 so that it can be concluded that the use of clean water sources is not related to the incidence of disease schistosomiasis where OR= 1.429. The relationship between the behavior of raising livestock and the incidence of disease schistosomiasis 16 (51.6%) case group respondents had livestock at home and the control group 15 (48.4%) had livestock at home as seen from p value 1,000 so that it can be concluded that keeping livestock at home is not related to the incidence of disease schistosomiasis where OR= 1,600. Relationship between health service

utilization behavior and disease incidence schistosomiasis it can be seen that 13 (93.3%) case group respondents did not utilize health services and the control group 17 (81%) utilized health services. The difference in this proportion is very significant as can be seen from the p value of 0.000 so that it can be concluded that respondents who do not use health services are at greater risk of suffering from disease schistosomiasis.

DISCUSSION

The respondent's characteristic factors which include age, gender, education level, marital status and occupation all illustrate the results that there is no relationship between the characteristic factors and the incidence of schistosomiasis. The main factor for disease transmission is water, which is the environmental medium needed for the development of Schistosoma japonicum worms, starting at the time the eggs hatch into miracidia and their cercariae, which infect humans in various age groups, sex, work and education.

Community behavior factors illustrate that there is a relationship between the habit of doing activities in rivers or ditches with the incidence of schistosomiasis. People who have habitual contact with sources of transmission (river/ditch water) are at high risk of infection and have a greater chance of suffering from Schistosomiasis compared to those who have never had contact with river/ditch water. Contact activities with river/ditch water such as bathing, washing, fishing, defecating and so on.

The risk factor for the behavior of people who have a habit of passing through focus areas shows that there is a relationship between the habit of passing through focus areas and the incidence of schistosomiasis. Someone who always passes through the focus area of the snail for activities or transportation on foot can cause someone to be infected with Schistosomiasis. Most of the

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focus is around rice fields and plantations of the population and this focus is a source of transmission of Schistosomiasis.

The third factor related to the incidence of schistosomiasis is the behavior of people who do not use health services. Community behavior that causes Schistosomiasis infection in rural areas is the lack of rural communities participating in community service in eradicating focus areas due to busy work in the fields. The counseling about the dangers of Schistosomiasis aims to provide information and understanding on how to prevent Schistosomiasis, so that the number of sufferers of this disease does not continue to increase. The level of public awareness about the dangers of Schistosomiasis will affect the willingness of the community to eradicate the disease such as environmental sanitation, using personal protective equipment if you want to make contact with focus areas and eradicating Schistosomiasis vectors.

Community behavior factors which include the use of healthy latrines, utilization of clean water sources and raising livestock are not related to the incidence of schistosomiasis. This shows that most of the respondents in both the case group and the control group had healthy latrines and had used clean water sources for their daily needs and even though the community raised livestock, the method of raising livestock had followed good work procedures, namely making cages away from the location of the focus of the snail and when feeding livestock wear gaiters.

CONCLUSIONS

Based on the results of the research that has been done, it can be concluded that there is no relationship between the characteristics of the respondents which include age, gender, education level, marital status and employment with the incidence of schistosomiasis, so it can be concluded that the main factor causing a person to suffer from

schistosomiasis is schistosomiasis not because of the characteristics of the respondents. On the other hand, there is a relationship between the behavior of people or respondents who often move in rivers or ditches, often pass through the conch focus area and do not use health care facilities with the incidence of disease schistosomiasis respondents in the community in the working area of the Wuasa Community Health Center, North Lore District, Poso Regency, Central Sulawesi Province. The factors of using healthy latrines, using clean water sources and raising animals are not related to the incidence of disease schistosomiasis so it is not an indicator of the incidence of schistosomiasis. It is hoped that this research can be a reference and information in assisting the handling of disease cases schistosomiasis and when found there are people who are infected with the disease schistosomiasis prevention and eradication of the disease can be done more quickly so that it can be prevented from being infected with schistosomiasis again.

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ORIGINAL RESEARCH

THE EFFECT OF LAVENDER AROMATHERAPY TO ANXIETY LEVELS PATIENT PREOPERATIVE ORIF ANTEBRACHII FRACTURE

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ABSTRACT	Keywords
Surgery is a potential or actual threat to a person's integrity and can subsequently cause a psychological reaction, namely anxiety. One alternative in overcoming anxiety is with lavender aromatherapy. Lavender aromatherapy has advantages compared to other types of aromatherapy, namely it is economical, easy to obtain, safe to use, does not take long and is practical because it does not require complicated equipment). Lavender has a chemical content, namely Linalyl acetate and linalool. These molecules have sedative and antidepressant effects that can affect a person's feelings and emotions. The purpose of this study was to determine the effect of lavender aromatherapy on the anxiety level of preoperative ORIF antebrachii Fracture patients. The study used a pre-experimental design with a One-group pre-post test design which was carried out on March 9 - April 9 2023. The population in this study were all preoperative ORIF Antebrachial Fracture patients for 1 month as many as 14 people in the bougenvile room at Kertosono Hospital. A sample of 14 respondents with total sampling sampling technique. Measurement of anxiety levels before and after being given lavender aromatherapy with Hamilton Rating Scale for Anxiety (HARS). Provision of lavender aromatherapy for 15 minutes. Data analysis used the Wilcoxon sign rank statistical test. The results of the Wilcoxon sign rank statistical test showed P value = 0.001 $<\alpha$ = 0.05 so that there was an effect of lavender aromatherapy on the anxiety level of preoperative ORIF Antebrachii Fracture patients. Lavender aromatherapy can be applied as an alternative solution in overcoming the anxiety of preoperative ORIF Antebrachii Fracture patients.	*Lavender Aromatherapy, Anxiety, Preoperative, ORIF, Antebrachii Fracture*

INTRODUCTION

The World Health Organization (WHO) states that traffic accidents are the number 8 cause of death and are the top cause of death in people aged 15-29 years in the world and if not taken seriously by 2030 traffic accidents will increase to become the fifth cause of death in the world. In 2011-2012 there were 5.6 million people died and 1.3 million people suffered fractures due to traffic accident (Desiartama & Aryana, 2017). According to data compiled by Wrong Diagnosis, Indonesia is the largest country in Southeast Asia with the highest incidence of upper extremity fractures of 1.3 million annually out of a population of around 238 million (Ropyanto, Sitorus, & Eryando, 2018). In East Java the incidence of fracture 2 is 6.0% (Riskesdas, 2018). The incidence of accidents is one of the basic health problems besides nutrition and consumption, environmental sanitation, dental and oral diseases, as well as aspects of morality and behavior (Einhorn & Gerstenfeld, 2015). One of the impacts of accident incidents is the occurrence of

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broken bones or fractures (Andersen, et al., 2016). Upper extremity fractures such as antebrachial fractures are the most common fracture sites. Differentiation is an alternative that is most often performed by patients with fractures by installing Open Reduction Internal Fixatie (ORIF), a type of internal fixation in the form of plates and screws (Syah, Budi P, & Khodijah, 2018). Operations are a potential or actual threat to a person's integrity and can subsequently cause physiological and psychological stress reactions (Maryunani, 2014).

Mental preparation is no less important in the process of preparing for surgery, because mentally unprepared or unstable can affect his physical condition. Anxiety or fear can result in physiological changes in patients before undergoing surgery (Majid & Mohamad, 2011). A survey by the Indonesian Ministry of Health team, fifteen percent of fracture patients experience psychological stress due to anxiety and depression. Patients feel anxious about surgery and its implications and feel that they have less control over their own situation. Anxiety is confusion, worry about something that will happen with unclear causes and can be associated with feelings of uncertainty and helplessness (Fatmawati & Arina, 2016). Anxiety usually arises preoperatively when the patient is anticipating surgery and postoperatively because of pain or discomfort, changes in body image and body function, dependence on others, loss of control, changes in lifestyle, and financial problems (Baradero, Mary, & Wilfrid, 2008). If anxiety does not receive adequate treatment from doctors, nurses, or family, it is possible that anxiety will get worse which will impact on the patient's unpreparedness for surgery (Einhorn & Gerstenfeld, 2015).

Strategies in reducing preoperative patient anxiety include providing education, music therapy, relaxation techniques, aromatherapy. The fragrance therapy known as aromatherapy is a useful therapeutic action to improve physiological and psychological conditions. Oils used in aromatherapy include essential oils, lavender flowers, chamomile, oranges, ylang-ylang oil, and jasmine oil (Setyoadi &

Kusharyadi, 2011). Lavender aromatherapy has advantages compared to other types of the aromatherapy, namely economical, easy to obtain, safe to use, does not require a long time and is practical because it does not require complicated equipment). Lavender has a chemical content, namely Linalyl acetate and linalool. These molecules have sedative and antidepressant effects that can affect a person's feelings and emotions (Wolfang & Michaela, 2008). Aromatherapy is a way of healing by using highly aromatic concentrations of essential oils extracted from plants. Aromatherapy works gradually covering the human senses of smell. Smell can have a strong effect on emotions and in the end can cause further effects. When you inhale, the tiny oil molecules seep into the lungs where some of the molecules are transported via the bloodstream to the alveoli. Aromas are captured by receptors in the nose and then provide further information to areas in the brain that control emotion and memory (Setyoadi & Kusharyadi, 2011). Its use, aromatherapy can be given in several ways, including inhalation, soaking, massage, and compresses. The inhalation method is considered the most direct and fast way of healing, because the volatile essential oil molecules act directly on the olfactory organs and are directly perceived by the brain (Godes & Lotus, 2000).

MATERIALS AND METHOD

This research was carried out on 9th March – 9th April 2023 in the bougenvile room of Kertosono Hospital. The population in this study were all preoperative ORIF Antebrachii Fracture patients for 1 month as many as 14 people in the bougenvile room at RSUD Kertosono. A sample of 14 respondents with total sampling sampling technique.

This study used a pre-experimental design with a one-group pre-post test design. Respondents were given lavender aromatherapy one day preoperatively. Lavender aromatherapy is given as much as 5 drops for 15 minutes using a mask. Monitoring is done every 5 minutes in the treatment room.

Measurement of anxiety levels with a questionnaire. The research instrument for measuring anxiety used the Hamilton Rating Scale for Anxiety (HARS) questionnaire. Hamilton Rating Scale for Anxiety (HARS) was given before and after 5 minutes of giving lavender aromatherapy. The Hamilton Rating Scale for Anxiety (HARS) has high validity and reliability for measuring anxiety in trial clinic studies, namely 0.93 and 0.97. Data analysis using SPSS 21 with Wilcoxon sign rank.

This study ethics uses informe consent, autonomy, confidelity, beneficient, non-maleficient, justice and fidelity

RESULTS

Characteristics of respondents included age, gender and education. Based on table 1, the patient pre operation ranging from 17-25 years are 5 respondent (35,7%). A half respondent man are 7 respondent (50%) and most sufferers education elementary school are 5 respondent (35,8%).

Table 1. Characteristics of respondents (n=14)

Variable	n	%
Age		
17-25 Years	5	35,7
26-35 Years	2	14,3
36-45 Years	0	0
46-55 Years	3	21,4
56-65 Years	1	7,2
>65 Years	3	21,4
Gender		
Man	7	50,0
Woman	7	50,0
Education		
No school	3	21,4
Elementary School	5	35,8
Middle School	3	21,4
High School	3	21,4

Table 2. The Anxiety Pre and Post lavender aromatherapy (n=14)

Anxiety	Pre		Post		P value
	n	%	n	%	
No anxiety	0	0	8	57,1	
	7	50	6	42,9	
Mild anxiety	7	50	0	0	0,001
Moderate anxiety	0	0	0	0	
Heavy anxiety	0	0	0	0	
Very Serious anxiety					

Based on table 2, The statistical test result shows that there is the anxiety before and after lavender aromatherapy in 15 minutes. The result of Wilcoxon sign rank p-value 0,001.

DISCUSSION

Anxiety disorders are more common in women than men because women are more sensitive to their emotions, which in turn are also sensitive to their feelings of anxiety. There is a role for hormones that affect emotional conditions so that they are easily anxious. In addition to gender which can affect anxiety, other factors such as the presence of a family companion as one of the support groups may greatly affect the state of feeling and the level of anxiety in patients who are about to undergo surgery. The role of a support group or family is as a guide in overcoming disturbing life problems related to diagnosis and treatment. The involvement of companions can help them adjust to the consequences of illness and treatment so that it will reduce their anxiety level about any actions that will be taken against them (Salsabilla, 2020).

Men's way of thinking tends to be global or not detailed compared to women. Individuals who see more detail will also easily experience anxiety because they have more information and can finally suppress feelings. Men are more active, explorative, while women are more sensitive. Hormonal levels possessed, men have the hormone testosterone which has the opposite effect to the hormone estrogen in women. The hormone testosterone inhibits the work of RORA (retinoic acid related orphan receptor

alpha). ROR-α functions as brain and lymph node development, lipid metabolism, immune response, and bone maintenance. RORA α and γ also affect the immune response and development of lymphoid nodes. The immune system is also regulated by gonadal steroid estrogens, androgens and progesterone (Anderson & A, 2019). Lavender aromatherapy works gradually covering the human senses of smell. Essential oils can be absorbed into the body through the skin, thereby affecting the physical and emotional levels. Scents can have a strong effect on emotions and can eventually have further effects.

Giving Lavender Aromatherapy is believed to be beneficial for calming and can balance emotions, improve memory, relieve tension and anxiety. Aromatherapy has several advantages as a supportive action such as relaxing and stimulating effects, calming anxiety and reducing depression (Anderson & A, 2019). Lavender aromatherapy has benefits for relaxation, anxiety, mood and there is an increase in the strength of alpha and beta waves which indicates relaxation. Lavender is analgesic and sedative. Lavender has an impact on reducing anxiety in preoperative kurtase patients, with the process when aromatherapy is inhaled it will stimulate olfactory cells then the message is conveyed to the limbic system in the brain, can release enceplin, endorphins and serotonin in response to stressors so as to bring Calm the body and reduce anxiety. The content of lavender, one of which is Lynalyl which is acidic, functions as a sedative. The effect of giving lavender aromatherapy by inhalation to the anxiety of patients with myocardial infarction (Najafi, Taghadosi, Sharifi, Farrokhian, & Tagharrobi, 2014). Giving aromatherapy can significantly reduce the level of anxiety and depression in women giving birth at high risk. Linalool is the main active ingredient that plays a role in lavender's anti-anxiety (relaxing) effects. These molecules have sedative and antidepressant effects that can affect a person's feelings and emotions. The positive impact of aromatherapy on reducing anxiety levels is due to lavender aromatherapy being given directly, namely inhalation. The inhalation method is considered the most direct and fast way of healing, because the volatile essential oil molecules act directly on the olfactory organs and are directly perceived by the brain. When aromatherapy is inhaled, the volatile molecules of the oil are carried by the air to the nose where delicate cilia emerge from the receptor cells. When the molecules attach to the hairs, an electro chemical message will be transmitted through the ball and olfactory into the limbic system. This will stimulate memory and emotional response. The hypothalamus acts as a relay and regulator, bringing up messages to the brain and other parts of the body. The message received is then converted into action in the form of releasing electrochemical compounds that cause euphoria, relaxation or sedation. The limbic system is mainly used for emotional expression systems (Fatmawati & Arina, 2016).

CONCLUSIONS

Lavender aromatherapy can reduce anxiety in preoperative patients so that lavender aromatherapy can be applied as an alternative solution in overcoming anxiety in preoperative ORIF Antebrachii Fracture patients.

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ORIGINAL RESEARCH

MODEL OF STRENGTHENING HEALTH LITERACY AND PREVENTION OF HYPERTENSION BASED ON FAMILY INDEPENDENCE

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ABSTRACT	Keywords
Hypertension is often referred to as the silent killer because it is a deadly disease accompanied by early symptoms for people with hypertension. The prevalence of hypertension continues to increase sharply and it is predicted by 2025 as many as 29% of adults, but the tendency to do prevention independently is still low. Prevention of hypertension can't be separated from the risk factors that exist in the family, including an unhealthy lifestyle. Family involvement in early detection needs to develop and modified so that every family member can reduce risk factors. The brief background of the topic and significance of the study. This study aims to collect information on the family of ability in health literacy as a solution to increase family independence in preventing hypertension. This study is used for research and development (R&D), which is the first of 3 research stages planned to be completed in 3 years. The research design was cross-sectional. The study was conducted on families in Bangkalan Regency with a sample of 150 people from 4 sub-districts representing mountainous, urban, rural, and coastal areas, namely Bangkalan, Kedundung, Sukolilo, and Kokop sub-districts taken by random cluster sampling. Data was collected using questionnaires and analyzed using Partial Least Square Path Modeling. This study has obtained ethically appropriate information through the Research Ethics Committee of the Health Polytechnic of the Ministry of Health Surabaya with the number EA/940/KEPK-Poltekkes Sby/V/2022. The results show that the demographic characteristics of the family have an effect on health literacy in preventing hypertension. Families with good health literacy can increase independence in preventing hypertension. Families who achieve a high level of independence will be able to prevent hypertension. The use of digital literacy can be a solution to improve people's health literacy skills. Materials from health literacy are made simpler but right on target. Supported by more complex forms of communication such as interactive video. Application usage to advance the knowledge of patients' hypertension can increase the independence of hypertension.	*Strengthening; Health Literacy; Family Independence; Hypertension Prevention.*

INTRODUCTION

Hypertension is a disease that can cause short-term and long-term impacts and is called the silent killer because this disease is classified as a deadly disease without any initial symptoms for people with hypertension (Brunner&Suddarth, 2013). The prevalence of hypertension continues to increase sharply and it is predicted that by 2025 as many as 29% of adults have hypertension, so they need prevention. Prevention of hypertension is inseparable from the risk factors that exist in the family, including unhealthy lifestyles, such as eating habits, lack of sleep and rest, weight control, and ability to manage stress(Alicea-Planas et al., 2016). Efforts to

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prevent hypertension require family involvement in early detection and implementing hypertension care at home. This is because the number of people with hypertension is getting higher but the tendency to do prevention independently is still low.

Family independence is needed to support family care with hypertension at home (Rosidin et al., 2018). Based on the indicators of family independence in a preliminary study taken at the Cardiology Clinic of Anna Medika Hospital, Madura, it is known that 60% of family independence in preventing hypertension is still in the category of less independent. Families who are less independent in the care of hypertension families are related to the level of knowledge. Knowledge in caring for families is related to family health literacy. Health literacy is related to the knowledge, motivation, and competence of the community (family) to access, understand, assess, and apply health information to make judgments and make decisions in everyday life regarding health care, disease prevention, and health promotion to maintain and improve quality of life. (Sørensen et al., 2012) included in the prevention of hypertension in the family. Families need to strengthen in health literacy to be able to care for family members with hypertension independently. Especially in Madurese families who have a culture and pattern of nutritional fulfillment that are accustomed to high salt and fewer vegetable foods. This pattern is very risky to be a trigger for hypertension.

In Indonesia, there is no research on family health literacy to be independent of the family by looking at certain ethnic groups based on the pattern of nutritional fulfillment for the prevention of hypertension. The previous research put more emphasis on the level of patients' health literacy on several diseases. And the results of research (Soemitro, 2014), (Sahroni et al., 2019), and (Rianti Kesumawati, Kusman Ibrahim, 2019), regarding the level of patient literacy in several cases of the disease show that it is still in the low category. While this study will explore a lot of information from families about the ability in health literacy as a solution

to increase family independence in preventing hypertension.

Hypertension can have an impact on increasing morbidity and mortality. The pattern of nutritional fulfillment in Madurese families tends to be at risk for increasing the prevalence of hypertension. The strong impact of the social and cultural structure of Madura determines the success of the implementation of the hypertension prevention program as a non-communicable disease. Supported by weak health literacy in caring for family members with hypertension, this has an impact on the high prevalence of hypertension. So research is needed with a study to develop a model of strengthening health literacy to increase family independence in preventing hypertension in the Madurese community.

The aims of this study were (1) Maping the health literacy of families in preventing hypertension in Madura. (2) Describing the trend of strengthening health literacy patterns to increase family independence in preventing hypertension in Madura, (3) Developing an effective model in strengthening health literacy to increase family independence for hypertension prevention in Madura.

METHOD
Methods should be structured as follows:
1.1 Research design
This research is the first phase of multi-year research that will be carried out for three years with a Research and Development (R & D) approach. This study uses analytic observational methods to describe the variables that affect the strength of family health literacy. Furthermore, by analyzing the strengthening of health literacy that has been carried out and drafting the development of a model for strengthening health literacy that can be applied in Madurese families. The research design was done by cross-sectional.

1.2 Setting and samples
The research was carried out in Bangkalan Regency, one of the cultural areas of Madura. The population of this research is families in Bangkalan Regency with 225,559 households spread over 273 villages or sub. The research sample was taken by random cluster sampling

from 4 sub-districts representing urban, rural, coastal, and mountainous areas with a total sample of 150 people.

1.3 Intervention (applies to experimental studies)

There is no intervention in this first phase of research.

1.4 Measurement and data collection;

Data was collected using a questionnaire that was compiled based on variable indicators that had been tested for validity and reliability.

1.5 Data analysis;

The data were analyzed using descriptive data to describe the characteristics of the respondents and the characteristics of each variable in the family health literacy model for preventing hypertension. Furthermore, the data were analyzed using *structural equation modeling* (SEM) based on *variance* or *component-based* SEM, which is called *partial least square* (PLS). PLS, testing is done with the help of *Smart PLS software version 2.0 for windows*. Furthermore, after the model is formed, a focus group discussion is conducted to determine strategic issues and review the research results. The FGD was attended by stakeholders consisting of the health office, the communication and information office, the KB PA and PP offices as well as the Youth, Sports, Culture, and tourism office.

1.6 Ethical considerations.

This research has obtained an ethical certificate from the Research Ethics Committee of the Health Polytechnic of the Ministry of Health Surabaya with the number EA/940/KEPK-Poltekkes_Sby/V/2022 dated April 25, 2022, in accordance with 7 WHO 2011 standards, namely social values, scientific values, equitable distribution of burdens and benefits, risk, inducement/exploitation, confidentiality, and privacy as well as approval after receiving an explanation referring to the 2016 CIOMS guidelines. Before the research was carried out, a research permit was issued from Bakesbangpol Bangkalan Regency number 072/111/433.207/2022 and Bangkalan District Health Office number 072/ 2014/433.102/2022 Prior to the research activity, the researcher gave an explanation to the respondent and asked the respondent to sign the informed consent that had been prepared.

RESULTS

The data used in this study were 150 families in several districts of Bangkalan Regency who met the criteria of the sample collection by *cluster random sampling*. Family demographic factors are sought as antecedent factors in strengthening family health literacy in preventing hypertension.

a. Social and Cultural Structure of the Bangkalan Society

Tabel 1. Frequency Distribution of Characteristics, Social structure and Culture of Bangkalan Society in 2022 (n=150)

Characteristics, Social structure and Culture of Bangkalan Society	F	%
Education		
Elementary School	37	24,7
Junior High School	16	10,7
High School	68	45,3
College/ University	29	19,3
Total	**150**	**100**
Occupation		
Civil Servant/ Soldier/ Police	11	7,3
Private	36	24
Self Employe	79	52,7
Other	24	16
Total	**150**	**100**
Family Income		
< 1.5 jt	85	56,7
1.5 - 2.5 jt	30	20
2.5 – 3.5 jt	20	13,3
>3.5 jt	15	10
Total	150	100
Geder		
Male	110	73,30
Female	40	26,7
Total	**150**	**100**
Information technology		
Good	70	46,67
Enough	70	46,67
less	10	6,66
Total	**150**	**100**
Political		
Good	85	56,67
Enough	63	42
Less	2	1,33
Total	**150**	**100**
Cultural values		
Good	94	62,67
Enough	52	34,67
Less	4	2,66
Total	**150**	**100**
Social Factors		
Good	0	0
Enough	7	4,67
Less	143	95,33
Total	**150**	**100**

Based on table 1, it is known demographically that most of the education levels of the Bangkalan people are already high because the average is already at the high school level and even at the university level. The average occupational demographic is self-employed with an average income of less than 1.5 million per month. Most Bangkalan people are very open to the use of information technology, especially in the use of gadget media and the use of the internet to obtain information (46.67%). From a political perspective, the average family position is close to health care facilities and allows easy access to health information and education (56.67%). Cultural values in the community are higher than the average in the good category (62.67%). Weaknesses in preventing hypertension in the community are social factors where the pattern of family support is no longer strong (95.33%).

b. The Family Health Literacy

The following is a description of family health literacy in preventing hypertension to create independence and the ability to prevent hypertension.

Table 2. Frequency Distribution of Health Literacy Ability in Hypertension Prevention in Bangkalan Regency in 2022 (n=150)

Health Literacy Ability in Hypertension Prevention in Bangkalan Regency	Frekuensi	Persentase
Ability to access information	28	18,7
Very good	100	66,7
Good	21	14,0
Enough	1	0,6
Poor		
Total	**150**	**100**
Understand information	24	16
Very good	105	70
Good	19	12,67
Enough	2	1,33
Poor		
Total	**150**	**100**
Justify and evaluate information	28	18,7
	100	66,7
Very good	21	14,0
Good	1	0,6
Enough		
Poor		
Total	**150**	**100**
Application of information	4	2,7
Very good	16	10,7
Good	105	70
Enough	25	16,6
Poor		
Total	**150**	**100**

Based on table 2, shows the ability of family health literacy in preventing hypertension in the ability to access information, understand information, and justify and evaluate information, mostly in the good or even very good category (66.7%). But in the application of information, most of them are in the poor category and are not even able to apply it (70%).

c. The Family Independence

The following is an illustration of the level of family independence in preventing hypertension through strengthening family literacy:

Table 3. Frequency Distribution of Family Independence in hypertension prevention in Bangkalan in 2022 (n=150)

Family Independence in hypertension prevention	Frekuensi	Persentase
Readiness to use healthcare		
Well Prepared	52	34,67
Ready	77	51,33
Less Prepared	19	12,67
Not Ready	2	1,33
Total	**150**	**100**
Knowing the Problem of Hypertension		
Very Capable	20	13,33
Can	90	60
Underprivileged	38	25,33
Incapacitated	2	1,33
Total	**150**	**100**
Deciding on Nursing Actions		
Very Capable	21	14
Can	86	57,33
Underprivileged	40	26,67
Incapacitated	3	2,00
Total	**150**	**100**
Carrying out proper care		
Very Capable	19	12,67
Can	94	62,67
Underprivileged	32	21,33
Incapacitated	5	3,33
Total	**150**	**100**
Modifying the environment		
Very Capable	17	11,33
Can	93	62,67
Underprivileged	35	24,00
Incapacitated	3	2,00
Total	**150**	**100**
Leveraging healthcare		
Excellent	44	29,33
Good	88	58,67
Not Good Enough	16	10,67
Bad	2	1,33
Total	**150**	**100**
Activeness in Preventing Disease		
Very Active	32	21,33
Active	87	58
Less Active	29	19,33
Inactive	2	1,33
Total	**150**	**100**
Sharing Information		
Very Active	36	24
Active	77	51,33
Less Active	35	23,33
Inactive	2	1,33
Total	**150**	**100**

Based on table 3 it can be seen that the level of family independence is already at an independent level, it can be seen that most families are ready to use health services if a family has hypertension (51, 33%). Furthermore, most families can recognize health problems related to hypertension (60%), decide on treatment actions (57.33%), carry out treatment, and modify the environment (62.67%). In utilizing health service facilities, most of them are in a good category (58.67%). Family independence in terms of being active in preventing hypertension and sharing health information is mostly in the active category.58% and 51.33%).

d. Prevention of Hypertension

The following is a description of the level of family ability in preventing hypertension through strengthening family literacy:

Table 4. Frequency Distribution of Family Ability in Prevention of Hypertension Bangkalan in 2022 (n=150)

Family Ability in Prevention of Hypertension	Frekuensi	Persentase
Health Check		
Excellent	23	15,33
Good	56	37,33
Enough	66	44
Less	5	3,33
Total	**150**	**100**
Nutritional Arrangements		
Excellent	14	9,33
Good	69	46
Enough	66	44
	1	0,67

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Less		
Total	**150**	**100**
Managing Weight		
Excellent	23	15,33
Good	67	44,67
Enough	54	36
Less	6	4
Total	**150**	**100**
Activity patterns and sports	10	6,67
Excellent	68	45,33
Good	63	42
Enough	9	6
Less		
Total	**150**	**100**
Managing Stress		
Excellent	0	0
Good	82	54,67
Enough	68	45,33
Less	0	0
Total	**150**	**100**
Avoiding Cigarette Smoke	0	0
Excellent	0	0
Good	122	81,33
Enough	28	18,67
Less		
Total	150	100

Based on table 4, the ability of the family to prevent hypertension, the health check-up action (44%), nutrition regulation (46%), weight management (44.67%), and activity and exercise patterns (45.3%) were in the good or even very good category. But there is prevention in the category of less and even unable to prevent stress management (54.67%) and avoid cigarette smoking (81.33%).

e. Inferential Analysis
1. Evaluation of Measurement Model (Outer Model)

Table 5 Values of Loading Factors (Cross Loadings) Convergent Validity Results

Constructs and Indicators		Loading (λ)	Information
Family Demographic Factors	X1.1	0.811	Valid & Sig.
	X1.2	0.864	Valid & Sig.
	X1.3	0.810	Valid & Sig.
	X1.4	-0.777	Invalid & Sig
	X1.5	0.843	Valid & Sig.
Factors of Social and Cultural Structure	X2.1	0.857	Valid & Sig
	X2.2	0.923	Invalid & Sig
	X2.3	0.948	Valid & Sig
	X2.4	0.752	Valid & Sig
Family Health Literacy	Y1.1	0.843	Valid & Sig
	Y1.2	0.751	Valid & Sig
	Y1.3	0.910	Valid & Sig
	Y1.4	0.808	Valid & Sig
Family Independence	Y2.1	0.757	Valid & Sig
	Y2.2	0.756	Valid & Sig
	Y2.3	0.858	Valid & Sig
	Y2.4	0.849	Valid & Sig
	Y2.5	0.871	Valid & Sig
	Y2.6	0.822	Valid & Sig
	Y2.7	0.752	Valid & Sig
	Y2.8	0.707	Valid & Sig
Prevention of Hypertension	Y3.1	0.776	Valid & Sig
	Y3.2	0.840	Valid & Sig
	Y3.3	0.840	Valid & Sig
	Y3.4	0.925	Valid & Sig
	Y3.5	0.846	Valid & Sig
	Y3.6	0.883	Valid & Sig

Based on table 5, it is known that not all variables are significant. The indicators are valid for measuring latent variables and show the criteria for goodness from a measurement model (*outer model*) except for the gender variable, who is responsible for the family and the cultural values of the community, which

must be excluded because they do not support the construction of the social and cultural

structure of the community.

2. Evaluation of the Structural Model (Inner Model)

Analysis of the structural model was conducted to examine the effect of exogenous factors on endogenous factors. The results of the full effect significance test are described in table 6 as follows:

Table 6 Structural Model Significance Test Results

Causality Relationships	Koefisien	T-statistcs	Influence
(X1) Family Demographics → (Y1) Health Literacy	-0.341	5.553	Significant
(X1) Culture and social structure → (Y1) Health Literacy	-0,308	4.556	Significant
(Y1) Health Literacy → (Y2) Family Independence	-0.167	2.639	Significant
(Y2) Family Independence → (Y3) Prevention of Hypertension	0.431	7.971	Significant

Health Literacy Model To increase family independence in preventing, it is shown in Figure 1 below:

Figure 1. Family Literacy Strengthening Model in Increasing Independence and Hypertension Prevention

Based on Figure 1 it is known that all T values -statistics on the path diagram (relationship of exogenous factors to endogenous factors) have a value greater than the t-table value > 1.96. In conclusion, the model in Figure 1 is structurally feasible.

DISCUSSION

1) Culture and Social of Bangkalan Society towards Health Literacy

Data shows that Bangkalan people are very open to the use of information technology, especially in the use of gadgets and the use of the internet to obtain information. From a political perspective, the average family position is close to health care facilities and allows easy access to health information and education. Cultural values in the community are better than average in the good category. Weaknesses in preventing hypertension in the community are social factors where the pattern of family support is no longer strong. The culture and social structure of the Bangkalan community affect the health literacy ability of the Bangkalan community in preventing hypertension. Based on the results of the Focus Group Discussion that increasing public health literacy in preventing hypertension can be done with digital literacy.

Although some dimensions of literacy are included in the good category, it turns out that the ability to implement health literacy is still lacking. This is inseparable from the cultural aspects of the Bangkalan people. The culture of health care in the family tends to be passed down as a culture. Strong culture often has an impact on decision-making abilities. Although people already know that it is not appropriate for health care in the family, but because it has become a culture in their environment, they tend to follow what has become a habit. A family environment that builds a culture of critical thinking will form critical individuals in various aspects of their lives, including health(Mardiana et al., 2019). The low level of health literacy is obtained from the culture that exists in the community(Duplaga, 2020).

The culture of the Bangkalan people is very influential on health literacy prevention of hypertension. This is in accordance with Kesumawati's research (2019) that low health literacy is influenced by culture and health information access technology(Rianti Kesumawati, Kusman Ibrahim, 2019). One aspect of culture in society is the development of technology to access information. Individuals must have access to health information and have the ability to seek information relevant to their health situation(Sahroni et al., 2019). Technological advances have many impacts on lifestyle changes (Meskó et al., 2017), which make it easier for people to access information. Information technology is a means of disseminating health information, so access to information technology is one of the determinants of health literacy (Manganello et al., 2017).

Politically, the government's policy to promote health promotion can also improve health literacy skills in preventing hypertension in the Bangkalan community. Health care facilities that are close to the community and supported by effective educational programs are supportive factors in improving public health literacy in preventing hypertension(Syahrir & Sabilu, 2021). Anggraini's research, FD P (2020) explains that there is a strong correlation between low health literacy and inefficient use of health services, and adverse health status(Anggraini F, 2020). Health workers are stakeholders who play an important role in providing an optimal understanding of health literacy (Eo & Kim, 2019).

Public trust in health issues is mostly good. People believe in the medical aspects of hypertension. The belief in the threat, the severity of which encourages people to seek information, try to understand the information, and make judgments about the information obtained. This study shows that public trust in disease can affect the ability of health literacy to prevent hypertension. Health literacy is related to belief (Eo & Kim, 2019). Health literacy has a significant moderating effect on the relationship between adherence and anxiety beliefs and perceptions of threatening disease (Shiyanbola et al., 2018).

Based on the development of communication culture, political government policies by increasing education programs in the community and the existence of public trust in health, one alternative to improve health literacy is digital literacy. Digital literacy refers to the skills to access, understand, question, critically analyze, and evaluate online content. The use of the internet in this digital era is able to make a person learn and practice skills in overcoming health problems.

2) Health Literacy of Family Independence in Preventing Hypertension

Data depiction from family respondents in Bangkalan Regency shows that the ability of family health literacy in preventing hypertension in the ability to access information, understand information and justify and evaluate information is mostly in the good or even very good category. But in the application of information, most of them are in the poor category and are not even able to apply it. In inferential analysis, it is known that health literacy has a significant effect on family independence in preventing hypertension.

The inability to apply information has been stated in Kim's research (2017) that respondents feel they have knowledge about using the internet to answer questions about health but do not have the skills to evaluate available health resources. is on the Internet. In addition, respondents lack confidence in their ability to apply information to health-related decision-making. While health literacy is needed to build family independence in preventing hypertension. Health literacy is relevant in all parts of the continuum of care, disability, and health, for the prevention and early detection of disease as well as for diagnosis and decision making for self-care (Schaeffer et al., 2017).

In terms of seeking/accessing information, disease prevention is mostly done using cell phones and computer devices. People with higher levels of health literacy will have better health information-seeking behavior (Lee et al., 2021) and tend to be able to obtain sufficient health information from various sources (Suka et al., 2015). Higher health literacy will enable a person to analyze the information obtained and determine the appropriate and reliable information (Chen, 2017). Inadequate health literacy is associated with an incorrect understanding of written information and problematic communication with health workers (Brooks et al., 2013). Individuals with low levels of literacy are less likely to make decisions about their health, such as worse health-threatening behaviors, higher health care costs and poor health status (Guo et al., 2018).

The results of the focus group discussion obtained an agreement that the use of digital literacy can be a solution to improve the health literacy of Bangkalan families in preventing hypertension. Furthermore, the materials from health literacy are made simpler but on target. Supported by more complex forms of communication such as interactive video. Community involvement in distributing educational videos containing short and simple messages in an effort to improve joint health through WA groups in the community. The use of the right application in increasing the knowledge of hypertension patients can increase the independence of hypertension management (Duan et al., 2020).

The higher the level of health literacy that the family has in preventing hypertension, the higher their independence and health status will be. Independent families will be able to use health services if a family has hypertension(Wahyuningsih, 2019). Good health literacy will have an impact on the family's ability to recognize health problems related to hypertension, decide on treatment actions, carry out treatment, and modify the environment. Furthermore, with good health literacy, families are able to take advantage of health service facilities(Al-Fayyadh et al., 2022), actively prevent hypertension and share health information.

3) The Independence Level of the Family's Ability in Preventing Hypertension

Data shows that the level of family independence is already at the independent level, most families are ready to use health services if a family has hypertension. Families are mostly able to recognize health problems related to hypertension, decide on treatment actions, carry out treatment, and modify the environment. In utilizing health service facilities, most of them are in the good category. Family independence in terms of being active in preventing hypertension and sharing health information is mostly in the active category. Family independence has a significant effect on the ability of families to prevent hypertension. It is known that in carrying out prevention, the family has been able to decide on health check-ups, nutrition settings, weight management and activity

patterns and the average body is in the good or even very good category. But there is prevention in the category of less and even unable to do prevention, manage stress and avoid cigarette smoke.

Independent families can recognize health problems related to hypertension, which greatly influences family involvement to carry out various prevention efforts. As previous studies have described families that can evaluate family history, it has great potential to educate and motivate entire families about their family's health risks and raise awareness about the importance of preventive health practices (Hunt et al., 2003). Moderate to vigorous physical activity, especially aerobic exercise, and improving cardiorespiratory fitness and reducing the incidence of hypertension (Bakker et al., 2018) require family involvement. Family involvement is needed in hypertension management to identify opportunities and challenges and inform treatment strategies. Patients will experience information difficulties if family support is not always available (Fort et al., 2020).

Family independence is very important in preventing hypertension by recognizing problems and modifying the environment. Families must understand and be able to modify the environment to prevent hypertension. Previous studies have explained that the effects of hypertension from air pollution are more prominent among men, smokers, drinkers, individuals with high-fat diets, and those who have a high level of physical activity, so modifications need to be made. behavior and environment to prevent hypertension (Li et al., 2020). Independent families will try to find information to take appropriate preventive steps. Many families are not aware of their family history and risk of developing hypertension problems until they start contacting relatives and collecting data to see the full picture (Fort et al., 2020).

Seeking information on preventing hypertension is also done by doing health literacy. Someone with hypertension who has good literacy also has lower sodium levels than someone else who has low health literacy ability (Luta et al., 2018). The dimension of health literacy can be seen from the way patients manage their own health actively by being actively involved in finding good health information and the ability to understand health information from health care providers. This can be a predictor of improving the quality of life of patients, one of which is patients with PTM who adhere to long-term treatment (Elisabeth Stømer et al., 2020).

Families who are able to decide what actions should be taken in an effort to hypertension will make it easier for families to provide care. Things that need to be controlled in the prevention of hypertension are diet patterns, avoiding cigarette smoke and managing stress. Diet control and avoidance of exposure to secondhand smoke by the family is very necessary because non-compliance often occurs. Fitriah et al.'s research (2019) stated that the pattern of hypertension prevention carried out by the Bangkalan Regency family from indicators, namely regular health checks, indicators of diligent activity and diet described as not yet optimal. Even for the category of avoiding cigarette smoke or managing stress, it shows that there are still many who are in the less category. Family independence in preventing hypertension is needed because the family has a duty to handle health problems at home.

Independent families always use health services to maintain their health status, including avoiding hypertension. People who use health service facilities can know and carry out early detection and prevention efforts against the incidence of hypertension compared to people who do not use health service facilities. If the risk factors are known, it will be easier to do prevention (Shahrir, M., & Sabilu, Y. 2021). Families who are already at a high level of independence will be able to carry out family tasks while preventing hypertension.

4) Implications and limitations
The results of this study can be used as input to be related sectors that the use of digital literacy can be a solution to improve people's health literacy skills. Materials from health literacy are made simpler but right on target. Supported by more complex forms of communication such as interactive video. Community involvement in distributing educational videos containing short and

simple messages to improve joint health through WA groups in the community. The use of the right application in increasing the knowledge of hypertension patients can increase the independence of hypertension management.

CONCLUSION

The results showed that the demographic characteristics of the family had an effect on health literacy in preventing hypertension. The culture and social structure of the Bangkalan community on health literacy in preventing hypertension. Families with good health literacy will be able to increase independence in preventing hypertension. Families who achieve a high level of independence will be able to prevent hypertension.

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AUTHOR CONTRIBUTION

The first author (F) contributed to preparing research proposals, developing research methods and instruments, and conducting data analysis and discussion. The second author (S) contributed to the preparation of research proposals, submission of ethical feasibility, data collection, and editing in the preparation of reports. The third author (R) contributed to the preparation of proposals, obtaining research permits, collecting data and processing of research data. And all members contributed to the preparation of the manuscript for publication.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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ORIGINAL RESEARCH

THE GIVING OF STRETCHING EXERCISE TO CHANGES IN LEVELS OF DYMENORRHES IN ADOLESCENT FEMALE

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ABSTRACT	Keywords
Dysmenorrhea is a menstrual disorder that is often experienced by young women, if left untreated it will interfere with learning concentration. Stretching exercise is an alternative to overcome dysmenorrhea. The purpose of this study was to determine the effect of giving stretching exercise on changes in the level of dysmenorrhea in class VII young women at SMPN 1 Prambon, Nganjuk Regency. The research design used a pre-experimental design (one group pre-test-post test design) which was carried out November 5 – 18, 2022. The population consisted of 40 young women, using a purposive sampling technique to obtain a sample of 30 respondents. The independent variable of the research is the giving of stretching exercise, while the dependent variable of the research is the change in the level of dysmenorrhea. Collecting independent variable data with SOP and dependent variable with Numeric Rating Scale. Statistical test using Wilcoxon Signed Ranks with a significance level of $\alpha = 0.05$. The results of the study before doing stretching exercises almost half experienced moderate pain as many as 12 (43%) of 30 respondents, and after doing stretching exercises almost half experienced mild pain, namely 14 (47%) of 30 respondents. The results of the Wilcoxon Signed Ranks statistical test showed ρ value $= 0.014 < \alpha = 0.05$ so Ha was accepted, which means that there is an effect of giving stretching exercise on changes in the level of dysmenorrhea in class VII young women at SMPN 1 Prambon Nganjuk. Based on the results of the study, stretching exercise affects changes in the level of dysmenorrhea in female adolescents. This is because when doing stretching exercises the body will produce endorphins. Endorphins are produced in the brain and spinal cord. This hormone can function as a natural sedative that is produced by the brain, causing a feeling of comfort that can relieve pain.	*Stretching Exercise, Dysmenorrhea, Young Women*

INTRODUCTION

Adolescence (adolescence) is a period of transition or transition from childhood to adulthood which is marked by physical, psychological and psychosocial changes. The earliest change to appear is biological development (Dieny, 2014). One sign of biological youth in young women is the start of menstruation. The age of young women at the time they first got menstruation (menarche) varied widely, namely between 10-16 years, but the average was 12.5 years (Prawirohardjo, 2005). For some young women, menstruation is sometimes like a scourge when unbearable pain occurs when menstruation arrives (Misaroh, 2009). This pain usually occurs after 12 months or more, starting from the first menstruation (Laila, 2011). This condition is known as menstrual pain or dysmenorrhea.

According to WHO in research, the incidence of dysmenorrhea is quite high

throughout the world. The average incidence of dysmenorrhea in young women is between 16.8-81%. On average in European countries, dysmenorrhea occurs in 45-97% of women. With the lowest prevalence in Bulgaria (8.8%) and the highest reaching 94% in Finland. In the United States, dysmenorrhea is recognized as the most common cause of absence from school for young girls. The incidence of dysmenorrhea in Indonesia is 54.89% for primary dysmenorrhea and 9.36% for secondary dysmenorrhea, which causes them to be unable to carry out any activities and this will reduce the quality of life for each individual (Eniwarti, 2014). The incidence of dysmenorrhea in East Java is 64.25%, consisting of 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea.

In general, the treatment of dysmenorrhea is divided into two categories, namely pharmacological and non-pharmacological approaches. Pharmacologically, dysmenorrhea can be treated with analgesic therapy which is the most commonly used method for pain relief, but this therapy can have an addictive effect and will have side effects of drugs that are harmful to patients (Eniwarti, 2014). Nonpharmacologically, dysmenorrhea can be treated with relaxation therapy, one of the relaxation therapies is doing light physical exercises, namely doing stretching exercises. This is because when doing stretching exercises the body will produce endorphins. Endorphins are produced in the brain and spinal cord. This hormone can function as a natural sedative that is produced by the brain, causing a feeling of comfort (Suparto, 2011). Regular stretching exercises can make the blood circulation in the uterine muscles smooth so that it can reduce dysmenorrhea. The release of natural endorphins can be increased by doing stretching exercises which will suppress the release of prostaglandins, in addition to being able to strengthen levels of beta endorphins, which are brain chemicals that function to relieve pain (Misaroh, 2009).

MATERIALS AND METHOD

The research design used a pre-experimental design with a one group pre-test post-test design approach. This research was conducted on November 5 – 18 2022 at Prambon Nganjuk 1 Public Middle School. The population in this study was all class VII students who experienced dysmenorrhea as many as 40 people. The sampling technique used is purposive sampling. The sample used was 30 respondents. In collecting data using research ethics with anonymity. Statistical test using the Wilcoxon sign rank test with a significant $\alpha = 0.05$. The independent variable in this study is stretching exercise, and the dependent variable in this study is changes in dysmenorrhea. Measuring tool in this study the independent variable using SOP and the dependent variable using the Numeric Rating Scale (NRS). NRS has a validity of r=0.90 and a reliability of more than 0.95, so it is valid and has high reliability.

This study ethics uses informe consent, autonomy, confidelity, beneficient, non-maleficient, justice and fidelity

RESULTS

Characteristics of respondents included age, age menarche, menstrual cycle and long menstruation. Based on table 1 it was found that the majority of 17 respondents (56.7%) were 13 years old, the majority were 20 respondents (66.6%) menarche age 12 years, the majority were 20 respondents (66.7%) regular menstrual cycles and Most of them, namely 19 respondents (63.3%), had a menstrual period of 3-5 days.

Table 1. Characteristics of respondents (n=30)

Variable	n	%
Age		
12 Years	4	13,3
13 Years	17	56,7
14 Years	8	26,7
15 Years	1	3,3
Age Menarche		
10 Years	0	0
11 Years	5	16,7

12 Years	20	66,6	
13 Years	5	16,7	
Menstrual Cycle			
Regular	20	66,7	
Iregular	10	33,3	
Long Menstruation			
3-5 Days	19	63,3	
6-7 Days	11	36,7	
>7 Days	0	0	

Table 2. The Level Dysmenorrhea Pre and
Post *stretching exercise* (n=30)

Level Dysmenorrhea	Pre		Post		
	Σ	%	Σ	%	P Value
No Pain	0	0	3	10	0,014
Mild pain	8	27	14	47	
Moderate pain	12	43	11	37	
Severe pain	10	33	2	6	
unbearable pain	0	0	0	0	

Based on table 2, The statistical test result shows that there is the pain before and after. The result of Wilcoxon sign rank p-value 0,014.

DISCUSSION

Menarche is the first menstruation experienced by women which is a sign of the beginning of a new life as a teenager in puberty which usually occurs in the age range of 10-16 years, the age when a girl begins to menstruate varies greatly. There is a tendency that currently children get their first menstruation at a younger age. There are those who are 12 years old who have had their first menstruation, there are also those who are 16 years old who have just experienced it. Menarche at an earlier age causes the reproductive organs not to function optimally and are not ready to experience changes resulting in pain during menstruation (Misaroh, 2009). In the early days of menstruation, menstrual cycles are usually irregular. This is because the body needs to adapt. Generally after 2-3 years, menstrual cycles will become regular.

Dysmenorrhea causes pain in the lower abdomen, which can radiate to the lower back and legs. The pain is felt as intermittent cramps or as a persistent dull ache. Usually the pain begins to occur just before or during menstruation. And, the pain reaches its peak within 24 hours, but after 2 days it will disappear. Almost all women experience discomfort in the lower abdomen before and during menstruation, forcing sufferers to rest and leave activities for several hours or several days (Sudarti, 2012).

Adolescent who experience menstruation longer than normal will experience pain during menstruation. The longer menstruation occurs, the more frequently the uterus contracts, as a result, more prostaglandins are released. As a result of excessive production of prostaglandins, pain arises (Novia & Nunik, 2008).

Physical exercise has been supported as a non-medical intervention to relieve dysmenorrhea. Billig was the first to advocate physical exercise for dysmenorrhea in 1943. He had the idea that women with dysmenorrhea contracted the muscles in the abdominal area and devised a series of stretching exercises which he stated had high scores for alleviating the symptoms of dysmenorrhea (Brown & Brown, 2010).

Doing stretching exercises during menstrual pain can be done for 5 minutes, with notes when stretching it is recommended not to overdo it, avoid sudden movements, pay attention to normal breathing while practicing, stretch as far as you still feel comfortable. In stretching exercises, we stretch muscles that are not normally used. In doing so, we stimulate these muscles and promote muscle growth. At the same time, the brain becomes active and encourages the secretion of Endorphin hormones. This hormone has an analgesic effect (Haruyama, 2014). When you stretch, Endorphin hormones will come out and be captured by the hypothalamus receptors and the limbic system (Marlinda, 2013). In addition, physical stretching exercises will increase blood flow and uterine muscle metabolism during exercise. In other words, increasing metabolism is a factor in reducing dysmenorrhea (Kaur, 2014).

Based on the results of the study, doing stretching exercises when experiencing dysmenorrhea affects changes in the level of dysmenorrhea so that abdominal muscle contractions are reduced. Although there are still respondents who do not experience changes in the level of dysmenorrhea, this can be caused by several factors, such as an excessive increase in the amount of the hormone prostaglandin in the blood so that contractions of the abdominal muscles occur continuously during menstrual bleeding, the presence of constitutional factors such as anemia or chronic diseases that can affect the occurrence of pain, and psychological factors such as unstable emotions and stress that make dysmenorrhea difficult to overcome. Whereas in young women who experience changes in the level of dysmenorrhea after doing stretching exercises, it can be caused when doing this stretching movement the brain produces endorphins hormones which have an analgesic effect resulting in reduced contractions and improving blood flow in the abdominal muscles, this condition can reduce menstrual pain or dysmenorrhea suffered by young women

CONCLUSIONS

There is an effect of giving stretching exercise to changes in the level of dysmenorrhea in class VII young women at SMPN 1 Prambon, Nganjuk Regency. This is based on the results of the Wilcoxon Signed Ranks Test statistic with α = 0.05 and the results obtained are ρ value = 0.014.

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ORIGINAL RESEARCH

THE EFFECTIVENESS OF RED BETEL LEAF AND ALOE VERA IN THE TREATMENT OF PERINEAL WOUNDS: LITERATURE REVIEW

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ABSTRACT	Keywords
Treatment of perineal wounds in postpartum women can be done by pharmacological and non-pharmacological methods, namely through complementary therapy with the use of herbs, which is betel leaf and aloe vera that have anti-inflammatory, anti-septic, anti-fungal and antibacterial effects. The purpose of this study was to determine the effectiveness of red betel leaf and aloe vera in the treatment of perineal wounds. This study uses a Literature Review, journal searches using Medline, PubMed, Tandfonline and Google Scholar databases for the last ten years. Analysis of the data used is descriptive statistics. Some literature discusses the treatment of perineal wounds using red betel leaf and aloe vera and has been shown to be effective in the perineum wound healing process in post artum mothers with an average length of healing that is faster than treatment without the intervention of red betel leaf and aloe vera. Conclusion, red betel leaf and aloe vera can be applied in the treatment of perineal wounds in postpartum.	*Red Betel Leaf, Aloe Vera, Perineal Wound, Literature Review*

INTRODUCTION

Indonesia's maternal mortality rate until 2019 is still high, at 305 per 100,000 live births[1]. One of the contributors to the maternal mortality rate is infection during the puerperium, which ranks second after bleeding that occurs in the genitals after delivery, which is caused by unsterile equipment, perineal rupture, bleeding, and poor hygiene in the perineal area[2,3,4].

The wound healing process is a physiological process that involves components in the form of cells and chemical substances needed in the process of inflammation, angiogenesis, and collagen deposition. Improper care of perineal wounds can result in moist lochia conditions and support the proliferation of bacteria that cause infection in the perineum which will spread to the urinary tract and birth canal. The entry of bacteria that are commensal and become infectious will increase the risk of postpartum infection[5,6,7].

Perineal wound care is also influenced by external factors (environment, tradition, knowledge, socio-economics, handling staff, maternal condition, and nutrition) and internal factors (hemorrhage, hypovolemia, local edema factors, nutritional deficits, personal hygiene, oxygen deficit , medication and overactivity). The application of treatment can be done pharmacologically and non-

pharmacologically, namely the use of herbal plants that can come from the leaves, fruit, seeds, tubers, stems, roots, and rhizomes. Some plants commonly used as complementary therapies are herbal medicine, Ayurveda, Siddha, Unani, Aloe Vera, and betel[8,9,10,11].

Red betel leaf (piper crocatum) has twice the antiseptic power as green betel leaf. The chemical constituents of red betel extract include essential oils, hydroxycavikol, cavikol, cavibetol, allilprocatekol, carvacrol, eugenol, p-cymene, cineole, cariofelen, cadmium estragol, terpenes and phenyl propada. Carvakrol is a disinfectant and antifungal so it is used as an antiseptic drug and contains flavonoids, alkaloids, and tannins as antimicrobials and has an antibacterial effect against Staphylococcus aureus and Eschericia coli[12,13]. Research conducted by Rosita, et al (2020) with independent t-test results with p -value = 0.001 showed that the use of red betel leaf boiled water affected the healing time of perineal wounds[14].

Perineal wound care in postpartum mothers can be done by boiling 20 pieces of red betel leaf for 10 minutes at 36°C and used 4 times a day as much as 500cc for vulvar hygiene[15,16]. In addition, a study conducted by Siregar, et al (2018) with the results of the non-paired sample test p = 0.002 showed that there was a significant difference in the average length of time for perineal wound healing between those given piper crocatum and those not given[2].

Another plant that can be used in the treatment of perineal wounds is aloe vera, which contains saponins, flavonoids, and polyphenols as cleansers so that it is effective for healing open wounds, while tannins are used as infection prevention and are useful as antiseptics. The main components of aloe vera liquid are aloin, emodin, resin, gum, and other elements such as essential oils. When the stem is split, there is a clear jelly-like liquid that contains anti-bacterial and anti-fungal substances and stimulates fibroblasts to heal wounds[10]. Research conducted by Dewi, et al (2020), using the Mann Withney test with p-value = 0.001 showed that aloe vera gel compresses can reduce pain and accelerate perineal wound healing.[17].

As described above, herbal plants such as red betel leaf and aloe vera can be applied as complementary therapies in the healing process and wound care, including in the treatment of perineal wounds which have been proven in several studies regarding their effectiveness, which is known to contain infection prevention and antiseptic properties. The preparation of this literature review focuses on discussing the treatment of perineal wounds with the application of complementary therapies using red betel leaf and aloe vera with related journal searches and drawing conclusions. Previously, there were no related studies that combined the use of red betel leaf and aloe vera, therefore, researchers were interested in compiling this literature review.

METHOD

This study uses a literature review design. The literature used in this study is in the form of journals that were searched using the MEDLINE, PubMed, Tandfonline and Google Scholar databases in 2011-2021. The search used the keywords for perineal wound care (wound healing perineal), "or" red betel (piper crocatum), "or" aloe vera. The search was carried out by searching for related journals using cross sectional, analytical descriptive, case studies, literature reviews, pre-clinical, and clinical trials methods. The selection of journals related to the samples used were postpartum mothers who experienced perineum due to episiotomy or spontaneous injuries as well as herbal plants that could be used as a complementary therapy, in this case including red betel leaf and aloe vera. the data extracted from the journals found are title, country, research purposes. research subject, research methods, measurement, sample, and result

The search results reached 11,509 related journals, then the scoping results found 30 journals that met the criteria with

17 national journals and 13 international journals with inclusion criteria: (a) journal with an explanation of perineal wound care using red betel leaf and/or aloe vera, (b) journal with an explanation of the results and effectiveness of red betel leaf extract and aloe vera, (c) journal available in English or Indonesian, (d) Published in the period 2011-2021. The exclusion criteria are: (a) incomplete journal content, (b) duplicate journal and (c) journal without year published.

RESULTS

Based on the results of the study showed a total of 13 out of 30 journals that have been analyzed discuss the effectiveness of red betel leaf and aloe vera in the treatment of perineal wounds in postpartum women using the quasi experiment, true experiment and double blind methods with samples of post partum mothers who experienced perineal injuries due to episiotomy or spontaneous delivery. The average healing time using red betel leaf is 3-6 days, with a boiling technique of 25 g/5-20 betel leaves for ±5-15 minutes with a mixture of 1-6 liters of clean water, then boiled at 1000c and cooled. The results of the decoction will be evaluated for 7 days, used 2-4 times a day or every after cleaning the genital area and observation using a checklist sheet or REEDA scale.

The use of aloe vera in the treatment of perineal wounds with a gel that is applied to the wound for 7 days post partum with an average healing of 4 days. Gel measuring 5x5x1 cm can be administered directly or by compressing sterile gauze for 30 minutes at 2 hours post-partum, repeated at 6 hours post-partum, then monitored using a checklist. Interestingly, aloe vera can be given with ice gel compresses that have been stored in a 100°C freezer, packaged in sterile gauze measuring 10x8x1 cm given at 2 hours post partum for 30 minutes and repeated at 6 hours post-partum proven to be able to make the mother more relaxed. Here is diagram flow 1:
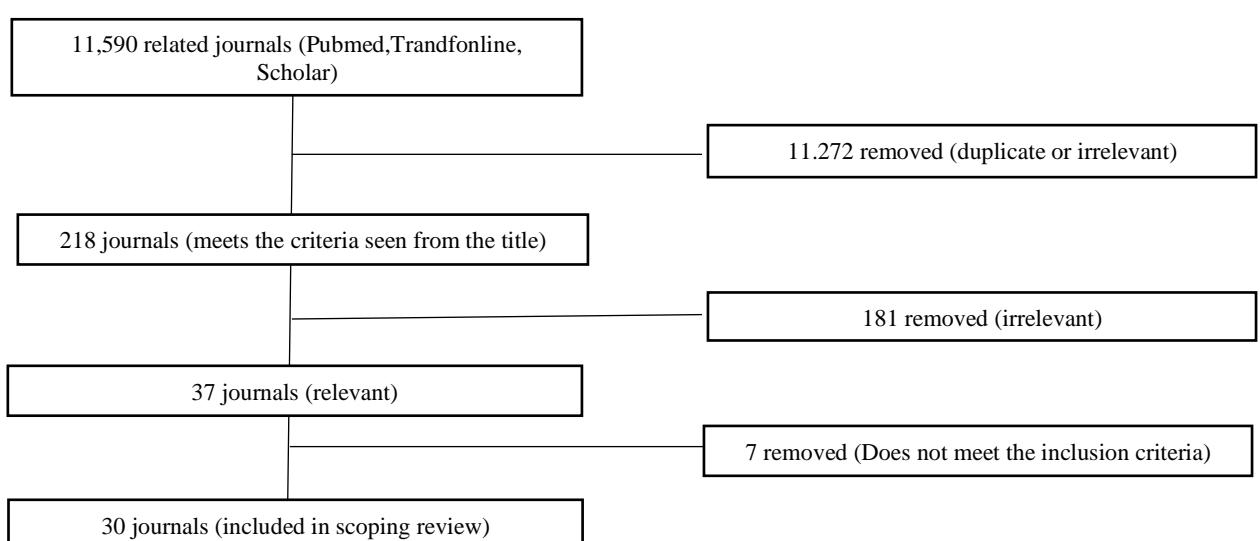

Figure 1. Diagram Flow

Figure 1 shows the results of the journal search flow from a total of 11,590 journals to 30 related studies spread across various countries such as Korea, Iran, China, Taiwan and Indonesia.

DISCUSSION

Perineal wounds are injuries to the perineal area caused by episiotomy and lacerations in the muscular area covered with skin between the vaginal introitus and anus [5,16]. Wound healing is a complex process that has three phases, namely the inflammatory phase, the proliferative phase and the maturation phase [9]. Perineal wound healing time will last 7 -10 days and not more than 14 days[6,22]. Perineal wound healing can be given pharmacological and non-pharmacological therapy, one of which is complementary therapy[20]. Pharmacological treatment using povidone iodine which inhibits tissue granulation, damages endothelial cells, leukocytes, fibroblasts, keratinocytes, inactivates phagocytes, and separates wound edges[4,27]. Complementary therapies using herbs have also been applied by postpartum mothers in various regions in Indonesia due to the effects felt, one of which is believed to be able to heal wounds after childbirth[12,18,19].

Indonesia is one of the countries that has high potential in the use of herbs with various benefits[18]. Some plants that are believed to be influential in the wound healing process include red betel and aloe vera that can be processed by boiling, using plants with palm wine, making potions, affixed directly, applied, and consumed directly[6,10]. Red betel has been shown to have anti-inflammatory properties and anti-oxidant activity [26,35]. The chemical constituents of 90% red betel are essential oils, hydroxykavikol, kavikol, cavibetol, allylprokatekol, carvakrol, eugenol, p-cymene, cineole, cariofelen, cadmium estragol, terpenes and phenyl propada. Carvakrol is a disinfectant and antifungal so it is used as an antiseptic medicine[13,34]. Red betel leaf extract is able to eat the fungus Candida Albicans which causes acute vaginal discharge, and itching of the genitals, and prevents infection in wounds [22,37].

Research conducted by Nila, et al (2020) the average healing time of perineal rupture using treatment with boiled water betel leaf is 8.27 days and a standard deviation of 0.704 with a minimum time of 7 days and a maximum of 9 days[21]. In addition, the research conducted by Rostika, et al (2020) where the provision of red betel leaves is done once a day in the morning, afternoon or evening by boiling 4-5 red betel leaves with 500-600 ml of water, boiled over medium heat for 10-15 minutes. The average perineal wound healing time after using boiled water of red betel leaf to clean the vagina (experimental group) was 5.80 days with a median of 5.00 days. The fastest was 3 days and the longest was 9 days. The results of the statistical test with an independent t test with $\alpha = 0.05$ obtained p value = 0.001 which contained the effect of using red betel leaf boiled water on the healing time of perineal wounds at Aster Clinic, Karawang Regency in 2020[14].

If you do not treat the perineal wound properly, it will affect the healing time of the wound and cause infection. Exposure to lochia and moist perineal conditions will support the proliferation of bacteria that can propagate in the bladder tract or in the birth canal which can result in the emergence of complications of bladder infections and infections in the birth canal. The use of betel leaf as a complementary therapy has proven to be effective in helping accelerate wound healing. perineum is supported by several existing studies penelitian[2,13,14,21,23].

Not only betel leaf, aloe vera contains anthraquinone, allantoin, and polysaccharides and other compounds capable of inhibiting the synthesis of histamine and bradykinin inhibiting the formation of prostaglandins which will eventually prevent the inflammatory process. Aloe vera contains more than 75

potentially active ingredients including vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acid, and amino acids. Because of its rich content of these benefits, aloe vera is widely used for treatment and various pathological conditions, one of which is for wound healing[17]. Aloe vera extract can be used as an antibacterial due to the presence of phenolic compounds that interact with proteins in bacteria through non-specific bonds to form phenol-bacteria complexes. Aloe vera is called an antibacterial plant because the extract of aged aloe vera skin contains active substances that have been identified as saponins, sterols and acemannan which can inhibit the growth of Staphylococcus aureus and Escherichia coli bacteria[11, 25,28,].

Research conducted by Dewi, et al (2020) showed that the use of aloe vera gel compresses for 30 minutes at 2 hours postpartum and repeated at 6 hours postpartum[17]. In addition, research conducted by Anggraini showed that the fastest wound healing time in respondents who used aloe vera gel extract was the 3rd day, the longest wound healing time was the 6th day. Most wound healing was on the 4th day. While the average length of perineal wound healing of respondents who used aloe vera was 4.59 or healed on day 5. The results of the analysis using the Mann-Whitney test with p = 0.000 showed that aloe vera gel was effective in healing and reduction of pain in perineal wounds[11]. Supported by research conducted by Eghdampour, et al (2013) which revealed a significant change in episiotomy wound on day 4 with aloe vera intervention with p value = 0.0001[30].

CONCLUSIONS

This literature review provides an overview of several research articles and results that are relevant to the use of red betel leaf and aloe vera herbs in the treatment of perineal wounds. In 30 related articles, it can be concluded that red betel leaf and aloe vera both contain anti-bacterial and anti-inflammatory properties so that they can be applied in the treatment of perineal wounds because they can help the healing process of perineal wounds and prevent infection.

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ORIGINAL RESEARCH

PHYSICAL ACTIVITY AND BLOOD GLUCOSE LEVELS IN DIABETES MELLITUS PATIENTS

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ABSTRACT	Keywords
Diabetes mellitus is a metabolic disease characterized by hyperglycemia. One of the risk factors and management of patients with diabetes mellitus is physical activity which can control blood glucose levels. This study aimed to determine the relationship between physical activity and blood glucose levels. The study design used correlation analysis with a cross-sectional approach. The population in this study was all type 2 diabetes mellitus patients at Abdoel Moeloek General Hospital Lampung. The sample used in this study was 52 respondents with consecutive sampling techniques. The research instrument for measuring physical activity was the physical activity level (PAL), and blood glucose level was measured using a glucometer, and data was analyzed using the Spearman Rho Test. The results showed that 32 respondents (61.5%) had mild physical activity, and 41 respondents (78.8%) had high blood glucose levels. The results showed a significant relationship between physical activity with blood glucose levels (p *value*=0,000; α<0,05) in patients with diabetes mellitus at the Abdoel Moeloek General Hospital, Lampung. Physical activity can help the body to lower blood glucose by way of metabolism involving glucose stored in the muscles so that glucose in the blood will fill the glucose vacancies in the muscles. Higher the physical activity in patients with diabetes mellitus, the lower the glucose level.	**Physical Activity, Blood Glucose Levels, Diabetes Mellitus**

INTRODUCTION

Diabetes mellitus (DM) is a metabolic disease that results from defects in insulin secretion, insulin action or both, characterized by hyperglycemia. DM is a chronic disorder characterized by a relative deficiency of insulin in fat and carbohydrate metabolism. DM is classified into two categories, namely type I diabetes (Insulin Dependent Diabetes Mellitus, IDDM) and type II diabetes (Non-Insulin Dependent Diabetes Mellitus, NIDDM) (Siregar et al., 2023). According to the World Health Organization, more than 180 million people suffer from DM worldwide. The International Diabetes Federation (2019) reports deaths of 4.6 million people due to DM. At the age of more than 20 years, it is estimated to experience complications from DM, while at the age of 65 years and above, DM cases increase 1-4 times (IDF, 2019).

According to the Data and Information Center of the Ministry of Health of the Republic of Indonesia, in 2021, almost all provinces in Indonesia experienced an

increase in the prevalence of DM from 2013 to 2018. Regions with the highest DM incidence rate in 2018 were still the same as those in 2013, namely the Yogyakarta, Jakarta, North Sulawesi and East Kalimantan provinces. The results showed that the prevalence of DM at the age of 20-25 years was 23.73%. One of the factors that can cause the occurrence of DM is the habit of doing physical activity. The habit of doing mild physical activity to moderate physical activity has a 3,198 times chance of experiencing DM compared to someone with high physical activity (Ramadhani et al., 2022).

Physical activity is directly related to increasing the rate of muscle glucose recovery. When a person performs an activity, the muscles use the glucose stored in the muscles. When glucose is reduced, the muscles fill the void by taking glucose from the blood. This process can lower blood glucose and improve blood glucose control (Suprayitna et al., 2023). Suppose physical activity is carried out only occasionally or in the mild to moderate activity category. In that case, it can cause energy requirements that are produced through the breakdown of glucose in the blood without any process of breaking down fat cells. The mechanism can cause blood glucose levels to increase again after carbohydrate intake returns to the body (Pakpahan & Tarigan, 2021). This study aimed to determine the relationship between physical activity and blood glucose levels at the Abdoel Moeloek General Hospital, Lampung.

METHOD

The study design used correlation analysis with a cross-sectional approach. The population in this study was all type 2 diabetes mellitus patients at Abdoel Moeloek General Hospital Lampung. The sample used in this study was 52 respondents with consecutive sampling techniques. The research instrument for measuring physical activity was the physical activity level (PAL), and blood glucose level was measured using a glucometer, and data was analyzed using the Spearman Rho Test.

RESULTS

Table 1 Respondent's Characteristics

Variable	Mean	Median	SD	Min-Max	95% CI Lower-Upper
Age*	56.38	56.50	10.17	36.00-85.00	53.55-59.22
Suffering DM	4.79	3.00	4.16	1.00-18.00	3.63-5.95

Variasle		n	%
Gender	Man	15	28.8
	Women	37	71.2
Marital Status	Single	0	0
	Married	45	86.5
	Widower/Widow	7	13.5
Education Level	Illiterate	2	3.8
	Elementary School	22	42.3
	Junior High School	12	23.1
	Senior High School	12	23.1
	College	4	7.7
Employment	Unemployed	32	61.5
	Private Employee	18	34.6
	Civil Engineer	2	3.8
Body Mass Index	Underweight	0	0.00
	Normal/Healthy	10	19.2
	Overweight	8	15.4
	Obesity	34	65.4

*Data was normally distributed

Respondent Characteristics

The results showed that the mean age in patients with DM at Abdoel Moeloek Hospital was 56.38 years with a standard deviation of 10.17 years. The median length of suffering from DM was three years, with the newest sufferer being one year and the longest sufferer being 18 years. Most of the sex prevalence was female, with as many as 37 respondents (71.2%). The majority of marital status was married, with as many as 45 respondents (86.5). The prevalence of education level was elementary school, with 22 respondents (42.3%). The majority of employment was mainly unemployed as many as 32 respondents (61.5%). The body

mass index's prevalence was mainly obesity, with as many as 34 respondents (65.4%).

Table 2 Physical Activity and Blood Glucose Level

	Variable	n	%
Physical	Mild	32	61.5
Activity	Moderate	12	23.1
	High	8	15.4
Blood	Low	1	1.9
Glucose	Normal	10	19.2
Levels	High	41	78.8

Physical Activity

The results based on Table 2 showed that most of the physical activity in DM patients was mild, with as many as 31 respondents (61.5%).

Blood Glucose Levels

The results based on Table 2 showed that most of the blood glucose levels in DM patients were high, with as many as 41 respondents (78.8%).

Bivariate Analysis

Table 3 Bivariate Analysis

Variable		Blood Glucose Levels					P value
		Low		Normal		High	
		n	%	n	%	n	%	
Physical	Mild	0	0.0	0	0.0	32	61.5	
Activity	Moderate	0	0.0	3	5.8	9	17.3	0.000*
	High	1	1.9	7	13.5	0	0.0	
Total		1	1.9	10	19.2	41	78.8	

* Significant at p-*value* <0.05

Physical Activity and Blood Glucose Levels

The results of the analysis based on Table 3 showed that most of the respondents with mild physical activity had high blood glucose levels of 32 respondents (61.5%), respondents with moderate physical activity mostly had elevated blood glucose levels, and respondents with mild physical activity mostly had normal blood glucose levels of 7 respondents (13.5 %). Further analysis showed a significant relationship between physical activity and blood glucose levels in DM patients at the Abdoel Moelok General Hospital, Lampung (p-value = 0.000; α <0.05).

DISCUSSION
Physical Activity
The results showed that most of the physical activity of DM patients was mild physical activity of 61.5%. The research was in line with Karwati's study (2022), which showed that most physical activity in DM patients is mild physical activity at 46.7%. Daily physical activity is defined as body movements carried out continuously through skeletal muscle contractions, and physical activity can increase energy metabolism. Physical activity is an excellent treatment choice for diabetes patients (Suardi, 2021). Physical activity performed by DM patients has many benefits, including 1) a decrease in blood pressure; 2) A better glycemic profile; 3) An optimization of lipid profiles; 4) An increase in insulin sensitivity in musculoskeletal; 5) Increasing insulin sensitivity and reducing insulin doses; 6) Improve renal function; 7) Improve the cardiorespiratory system; 8) Increase antioxidants (Cannata F et al., 2020).

The study showed that 19 respondents (36.5%) had mild physical activity for unemployed DM patients. The research was in line with research conducted by Arania et al. (2021), which showed that most of the physical activity of DM patients was mild physical activity at 39.7%. Further analysis showed a significant relationship between employment and physical activity in DM patients (p-value = 0.000; α <0.05). According to the American Diabetes Association, someone who works has benefits in controlling blood glucose levels through physical activity and can prevent complications. The physical activity of someone unemployed is not as much as that of someone working. Mild physical activity causes a lack of energy burning in the body

so that energy is stored as fat. These conditions can cause a person to be obese, and obesity is a factor in the incidence of diabetes mellitus (Cicilia et al., 2018; Ramadhani et al., 2022).

Blood Glucose Levels

The results showed that most of the blood glucose in patients with DM was high blood glucose levels of 78.8%. The research was in line with Karwati (2022), which showed that most of the blood glucose levels of DM patients were high blood glucose levels of 46.6%. Blood glucose is the primary carbohydrate material in the blood as fuel for the body's organs. Glucose is used as the primary source of energy formation, and glucose can also be stored in the form of glycogen. Blood glucose levels are an indicator to find out that someone has diabetes mellitus (Putri et al., 2019).

The results showed that DM patients with obese BMI had high blood glucose levels in as many as 41 respondents, 78.8%. A study by Adnan et al. (2013) showed that there was a significant relationship between body mass index and blood glucose levels in patients with DM (p-value = 0.000; α <0.05). The analysis results obtained r = 0.201, meaning that the higher the body mass index, the higher the blood glucose level. For someone who is overweight (obese), the level of leptin in the body will increase. Leptin is a hormone associated with the obesity gene. Leptin in the body plays a role in the hypothalamus to regulate body fat levels and the ability to burn fat into energy. In someone with obesity, there is resistance, namely leptin inhibits insulin receptor substrate-1 (IRS) phosphorylation, causing obstacles to glucose uptake and increasing blood glucose levels (Azizah, 2020).

Physical Activity and Blood Glucose Levels

The results showed a significant relationship between physical activity and blood glucose levels in patients with DM (p-value = 0.000; α <0.05). The research was in line with Karwati's Karwati (2022), which showed

that there was a significant relationship between physical activity and blood glucose levels (p-value = 0.000; α <0.05). The results of a study conducted by Setyawan & Sono (2015) showed that there was a significant relationship between physical activity and blood glucose levels in patients with DM (p-value = 0.04; α <0.05). Physical activity can cause muscle contractions, significantly lower extremity muscle contractions. During workouts, insulin and exercise increase glucose uptake by translocating glucose transporters. Insulin provides a signal so that phosphorylation occurs to the insulin receptor, insulin-1/2 substrate in tyrosine residues and tyrosine residues and phosphatidylinositol 3-kinase is activated (Ahmad et al., 2021; Chiang et al., 2019).

Physical activity is directly related to increasing the rate of muscle glucose recovery. When a person performs an activity, the muscles use the glucose stored in the muscles. When glucose is reduced, the muscles fill the void by taking glucose from the blood. This process can lower blood glucose and improve blood glucose control. When the oxidative phosphorylation mechanism occurs, the breakdown of one glucose molecule becomes 36 ATP to meet the body's energy needs. Suppose physical activity is carried out only occasionally or in the mild to moderate activity category. In that case, it can cause energy requirements that are produced through the breakdown of glucose in the blood without any process of breaking down fat cells. The mechanism can cause blood glucose levels to increase again after carbohydrate intake returns to the body (Pakpahan & Tarigan, 2021; Suprayitna et al., 2023).

CONCLUSIONS

Physical activity can help the body to lower blood glucose by way of metabolism involving glucose stored in the muscles so that glucose in the blood will fill the glucose vacancies in the muscles. Higher the

physical activity in patients with diabetes mellitus, the lower the glucose level.

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ORIGINAL RESEARCH

THE EFFECTIVENESS OF GIVING SOY MILK TO INCREASING HAEMOGLOBIN (Hb) LEVELS IN ANEMIA ADOLSCENT IN THE WORK AREA OF THE CIHIDEUNG COMMUNITY HEALTH CENTER TASIKMALAYA CITY

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ABSTRACT	Keywords
The World Health Organization (WHO) states the prevalence of anemia in developing countries at 30-48%. Based on Riskesdas 2018, the prevalence of adolescent anemia in Indonesia is 32. The prevalence of anemia in the working area of the Cihideung Health Center is 36.61%. This study aims to determine the effectiveness of soy milk administration against increased levels of haemoglobin (hb) in anemic adolescent girls. This study uses Quasy-Experiment design with Pretest and Posttest Control Group design. This research carried out in the working area of the Cihideung health center, Tasikmalaya City. The population in this study was adolescent girls aged 13-14 years who had anemia as many as 30 adolescents. The sampling technique to be used is total sampling. The data analysis used was univariate analysis and Wilcoxon bivariate analysis and Mann Withney difference test. The results of the study found that the average Hb level of the intervention group before treatment was 10.833, after treatment increased to 13.267, so there was an increase of 2.434. In the control group before treatment was 10,987, after treatment increased to 12,593, resulting in an increase of 1,606. Wilcoxon statistical test was carried out, the intervention group obtained results (P = 0.001) and the control group (P = 0.001). Different test was carried out using Mann Withney's analysis, the results of the P Value value of 0.011. It can be concluded that there is a significant difference in average Hb levels between the intervention group and the control group	**Adolescent, Anemia, HB Levels, Soy Milk**

INTRODUCTION

Adolescence is a transition period from childhood to adulthood with an age limit of 10-19 years. In boys, this period begins at the age of 14 years, and in girls begins at the age of 10 years. Adolescence is a time when adolescents experience specific changes so these changes can affect adolescent health. In adolescence, changes occur, one of which is in the lifestyle of adolescents. Lifestyle changes and changes in consumption patterns can affect adolescent malnutrition. Lack of consumption of foods containing iron can lead to anemia, which has a short and long-term impact on adolescents. (Ariani 2017)

The short-term impact that occurs in anemic adolescents is low productivity and decreased learning ability. While the long-term impact on adolescents who are anemic is that the immune system and adolescent growth will be delayed it can cause high rates of pain. (Ariani 2017) Anemia is a condition where there is a reduction in erythrocytes indicated by a reduced content of Haemoglobin (Hb), Hematocrit, and quantity of Erythrocytes. The formation of Haemoglobin (Hb) requires the availability of iron and body greeting protein. Protein serves as a carrier of iron to the bone marrow to form new Haemoglobin (Hb) molecules. (Nasruddin, Faisal Syamsu, and Permatasari 2021)

Anemia is a condition in which the amount of hemoglobin (Hb) is less than the normal amount. Normal hemoglobin (Hb) levels in men and women have differences. In men, normal Haemoglobin (Hb) levels are 13 g / dL, while in women normal Haemoglobin (Hb) levels are 12 g / dL. (Ariani 2017) Iron deficiency anemia is a universal problem in the world affecting more than 2 billion people worldwide. With the majority of them being in developing countries as much as 89%. Anemia affects about 300 million children in the world aged from 6 months to 5 years. In developing countries, Iron deficiency anemia is a health problem that affects toddlers, preschoolers, and school children due to the rapid rate of development combined with depleted Iron storage, poor living conditions, and inadequate diet. (Nasruddin et al. 2021)

The World Health Organization (WHO) states that more than 30% of the world's accusers have anemia. The prevalence of anemia in developed countries is 4.2-20% and in developing countries is 30-48% with iron nutrition anemia. In developing countries, the prevalence of anemia is 10-20% higher than in developed countries in the world. (WHO 2015) The incidence of anemia in Indonesia is still quite high. Based on Riskesdas 2018 information, the prevalence of anemia in adolescents is 32%, meaning that 3-4 out of 10 adolescents have anemia. (Kemenkes RI 2018)

The Nutrition International survey in 2018 found that the problem of anemia of adolescent girls in West Java was 41.93% with the coverage of adolescent girls who received blood-added tablets (TTD) according to West Java in 2021 was only 25.2% and still at the bottom of the West Java target, which was 52%. In West Java, the coverage of adolescent girls taking 52 tablets of added blood (TTD) in 2021 was 16.7%. (Dinas kesehatan provinsi jawa barat 2022) Based on data in Tasikmalaya City in 2019, it is known that the prevalence of anemia in adolescent girls aged 12-19 years is 19.6%. This data shows that the incidence of anemia in adolescent girls is still high because the prevalence of anemia is considered to be a health problem if >15%. (Dinas Kesehatan Kota Tasikmalaya 2019)

Based on the Circular Letter of the Head of the Tasikmalaya City Health Office Number 440/54/Dinkes regarding anemia screening activities for grade 7 and 10 students of all schools/madrasahs in Tasikmalaya City, addressed to all UPTD Puskesmas in Tasikmalaya. From 22 community health centers in Tasikmalaya, results were obtained from 8 community health centers that had screened for anemia in adolescent girls in their work area. Based on the screening results, 759 out of 1,694 female students have anemia, so anemia in adolescent girls in Tasikmalaya City ranges from 45% of the number of female students who have been screened. (Dinas Kesehatan Kota Tasikmalaya 2022)

The data above, data was obtained from one of the community health centers, namely Cihideung Health Center, which has carried out anemia screening for grade 7 and 10 adolescent girls. The results of the screening conducted by Puskemas Cihideung from January to May 2023 found that 179 out of 489 adolescent girls had anemia so the prevalence of anemia in the Cihideung Health Center work area was 36.61%. (Puskesmas Cihideung 2022)

Adolescent girls are prone to suffer from anemia because of a lot of blood loss during menstruation. Rheumatri who suffers from anemia is at risk of anemia during pregnancy. This will have a negative impact on the growth and development of the fetus

in the womb and has the potential to cause complications of pregnancy and childbirth, even causing the death of mothers and children. (Latief et al. 2018) Young women need 8-15 mg of iron daily. (Kementerian Kesehatan RI 2018) Iron for Hb synthesis is obtained from transferrin. Low levels of transferrin in the blood can be caused by low intake of iron nutrients from food, less effective absorption in the intestine, or due to increased needs. Dietary iron absorption ranges from 10-15% depending on the iron source.(Valentina, Yusran, and Meliahsari 2021)

The availability of iron and sufficient protein in the body is needed to synthesize Haemoglobin (Hb). Hemoglobin Hb is a molecule consisting of globin proteins, porphyrins, and hemp iron. If these three factors are not fulfilled properly Hb synthesis will be inhibited. Protein and iron are the most commonly deficient components in the body. (Rizki and Wiji 2022) Increased levels of Haemoglobin (Hb) in the body is the consumption of nutritious foods that can be obtained from iron-rich animal foods such as meat, fish, chicken, liver, and eggs and plant foods such as dark green vegetables, beans, and tempeh. Sources of iron are red meat such as beef, mutton, lamb, beans, green vegetables, eggs, and seafood. (Valentina et al. 2021)

Soybeans are the best source of protein, vitamins, minerals, fat, and fiber, but soybeans are more often processed into food ingredients, namely tempeh or tofu, and used to make drinks such as soy milk. (Valentina et al. 2021) Soy milk is one of the processing products which is the result of extraction from soybeans. Soy milk protein has almost the same amino acid arrangement as cow's milk so soy milk is often used as a substitute for cow's milk for those who are allergic to animal protein. (Budimarwanti 2017)

Soy milk is a highly nutritious drink, especially its protein content. In addition, soy milk also contains fat, carbohydrates, calcium, phosphorus, iron, provitamin A, vitamin B complex (except B12), and water. (Budimarwanti 2017) Soy protein contains 18 amino acids, namely 9 types of essential amino acids and 9 types of nonessential

amino acids. Essential amino acids include cystine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. Nonessential 6 amino acids include alanine, glycine, arginine, histidine, proline, tyrosine, aspartic acid, and glutamic acid. In addition, soy protein is very sensitive to physical treatment and whiskers. (Martono, Danriani, and Hartini 2016) 100 grams of soybeans contained 8.54 gr, of energy 446 kcal. Protein 36.5 gr, fat 19.9 gr, carbohydrate 30.2 gr, sugar 7.33 gr, fiber 9.3 gr, calcium 277 mg, Fe 15.7 mg, vitamin C 6 mg. (USDA 2019)

In line with previous research conducted by Nurmalia Rizki and Friends in 2022 entitled "The Effect of Soy Milk on Increasing Haemoglobin (Hb) Levels of Young Women of SMA Negeri 1 Perhentian Raja Kampar" reported that the provision of soy milk had a significant effect on the Hb levels of adolescent girls at SMA N 1 Perhentian Raja, Kampar. The occurrence of increased Hb levels in subjects given soy milk is because soy milk contains 35-40% protein, and 90% of its part is stored in 2 forms of globulin protein, namely 11S glycinin and 75 β-conglycinin. Glycinin has subunit A (acid) and subunit B (base), while β-conglycinin has subunits α and β. This protein contains all the essential amino acids so soy products are almost similar to animal foods in terms of protein quality but with lower saturated fat levels and no cholesterol (Rizki and Wiji 2022)

Based on research by Adinda Valentina and Friends in 2021 entitled "The Effect of Soy Milk on Increasing Haemoglobin (Hb) Levels. In anemic pregnant women in the working area of the Lepo-Lepo Health Center in Kendari City in 2020" also stated that there was an increase in Haemoglobin (Hb) levels in anemic pregnant women. In his research, it was found that there was a difference in the average Hb levels before and after the intervention. Increased Hb levels with an average increase in Hb levels of 0.87 g / dl. This is because 100 ml of soy milk contains 0.70 mg of iron (Fe). (Valentina et al. 2021)

Related to this that by meeting the nutritional needs and nutrition in adolescents

to prevent iron deficiency anemia, researchers are interested in research to determine the effectiveness of soy milk administration against changes in Haemoglobin (Hb) in adolescents as prevention of anemia in the Tasikmalaya region entitled " The effectiveness of soy milk on increasing hemoglobin (Hb) levels in anemic adolescent girls in the working area of Cihideung Health Center, Tasikmalaya City".

METHOD

This study uses Quasy-Experiment design with Pretest and Posttest Control Group design. This research carried out in February - June 2023 in the working area of the Cihideung health center, Cihideung District, Tasikmalaya City. The population in this study was adolescent girls aged 13-14 years who had anemia as many as 30 adolescents. The sampling technique to be used is total sampling. The data analysis used was univariate analysis and Wilcoxon bivariate analysis and Mann Withney difference test.

RESULTS

Table 1. Frequency distribution of hemoglobin (Hb) levels in the Intervention Group and the Control Group before Treatment.

Group	Before Treatment				
	N	Min	Max	Average	SD
Intervention	15	9,6	11,5	10,833	0,5715
Control	15	10	11,9	10,987	0,5866

Based on Table 1. The Hb level of female adolescents in the intervention group before treatment had an average Hb lower than the average Hb in the control group before treatment. The average value of the intervention group was 10.833 and the average control group was 10.987.

Table 2. Frequency distribution of hemoglobin (Hb) levels in the intervention group and the control group after treatment.

Group	After Treatment				
	N	Min	Max	Average	SD
Intervention	15	12,4	15	13,267	,8600
Control	15	12	14	12,593	,5587

Based on Table 2. The Hb level of female adolescents in the intervention group after treatment had an average Hb higher than the average Hb in the control group after treatment. The average value of the intervention group was 13.267 and the average control group was 12.593.

Table 3. Comparison of Hemoglobin Levels in the Intervention Group and the Control Group in Anemia in Young Girls in the Working Area of the Cihideung Health Center, Tasikmalaya City

	Intervention Group	Control Group	P Value
Pretest			0.001 *
Means	10,833	10,987	
range	1,9	1,9	
Postest			0.001 *
Means	13,267	12,593	
range	2,6	2	
Ascension	2,434	1,606	
P.Value Comparison of Pretest and Posttest	0.533 **	0.011 **	

Data Normality Test: Shapiro-Wilk; *Wilcoxon; **Mann-Withney

Based on Table 3. the average hemoglobin (Hb) level in the intervention group before being given treatment was 10.833. After being given treatment, it increased to 13.267, increasing to 2.434. Statistical test results using Wilcoxon data analysis obtained a Z count -3.411 b and analysis using Wilcoxon obtained a P value 0.001 <0.005, which means H0 was rejected.

The average hemoglobin (Hb) level of the control group before being given treatment was 10.987 after being given the treatment it increased to 12.593, increasing to 1.606. Statistical test results using Wilcoxon data analysis obtained Z count -3.412 b and P Value 0.001 <0.005.

Then a different test was performed on the 2 groups using Mann Withney

analysis. The Mann-Withney test in the intervention group and the control group before treatment obtained a P value of 0.533 > 0.05. This means there was no significant difference between the Hb levels of the intervention group and the control group before being given treatment.

Then the Mann-Withney test was carried out in the intervention group and the control group after treatment obtained a P value of $0.011 < 0.05$. This means there is a significant difference between the intervention group (giving soy milk and Fe tablets) and the control group (giving only Fe tablets).

DISCUSSION

1) Description Of The Hemoglobin Level Of Female Adolescent In The Intervention Group An The Control Group Before Treatment

The results of the research that was carried out showed that the hemoglobin level description of the female adolescents in the intervention group before treatment was 10.833, and in the control group, the average Hb level before treatment was 10.987.

Iron deficiency anemia (ADB) is caused by the disruption of iron homeostasis in the body. Iron homeostasis in the body is regulated by iron absorption which is influenced by iron intake and iron loss. Lack of intake of iron/iron intake decreased absorption, and increased loss of iron can cause an imbalance of iron in the body, causing anemia due to iron deficiency.

The iron that manages to enter the enterocytes will interact with para ferritin to then be absorbed and used in the process of erythropoiesis. The rest flows into the blood plasma for reutilization or is stored in the form of ferritin or binds to transferrin. The iron-transferrin complex is stored in cells outside the digestive system or in the blood. (Proverawati 2011)

2) Description Of The Hemoglobin Level Of Female Adolescent In The Intervention Group An The Control Group After

The results of the research that has been done show that the hemoglobin level description of the female adolescents in the intervention group after being given treatment is 13.267 and the average Hb level in the control group after being given treatment is 12.593.

Treating and preventing iron deficiency can be done by increasing the consumption of iron from animal sources such as meat, fish, poultry, seafood, and plant foodstuffs (green vegetables, nuts). Accompanied by the consumption of iron supplementation, this is a way to overcome iron deficiency anemia in areas with high prevalence. Provision of iron supplementation in adolescents at a dose of 1 mg/kg/day and iron supplementation should not be given with milk, coffee, tea, soft drinks containing carbonate, multivitamins containing phosphate, and calcium.

Fe tablets are iron nutritional supplements containing 200 mg of elemental iron and 0.25 mg of folic acid which play an important role in the formation of red blood cells. Fe tablets can be consumed at night before going to bed, this can prevent the onset of nausea that some young women complain about after consuming Fe tablets. Fe tablets are best taken with water and avoid taking Fe tablets together with coffee and tea which contain tannins and caffeine which can inhibit the absorption of iron in the body.

Soy milk has almost the same protein content and amino acid composition as cow's milk. In addition, soy milk contains sufficient amounts of iron, minerals, and vitamins. Soybean is a high source of oil. Soybean fat content is around 18% and contains essential unsaturated fatty acids that the body needs for a healthy life. Soy milk besides containing iron and vitamin C also contains protein which can increase hemoglobin levels in pregnant women who experience anemia (Astawan 2012)

The availability of sufficient iron and protein in the body is needed to synthesize Hemoglobin (Hb).

Hemoglobin Hb is a molecule consisting of the protein globin, protoporphyrin, and haem iron. If any of these three factors is not fulfilled properly, Hb synthesis will be hampered. Protein and iron are components that are most often deficient in the body.

3) Comparison of hemoglobin (Hb) levels in the intervention group and the control group in anemic young women in the working area of the Cihideung Health Center.

Based on Table 3 Comparison of Hemoglobin Levels in the Intervention Group and Control Group in Mild Anemia in Young Girls in the Work Area of the Cihideung Health Center, Tasikmalaya City. It was found that the average hemoglobin level in the intervention group before being given treatment was 10.833, after being given treatment it increased to 13.267, increasing to 2.434. Statistical test results using Wilcoxon data analysis obtained Z count -3.411 b and P Value 0.001 <0.005.

Based on Table 4.3, the average hemoglobin (Hb) level of the control group before being given treatment was 10.987, after being given treatment it increased to 12.593, increasing to 1.606. Statistical test results using Wilcoxon data analysis obtained Z count -3.412 b and P Value 0.001 <0.005.

Because the data are not normally distributed, the Difference Test will be continued with the Mann-Whitney U statistical test to see how significant the differences are between the intervention group and the control group. Based on Table 4.3 of the Mann Whitney U test in the intervention group and the control group before being given treatment, the output "Test statistic" was known to be a P value of 0.533 > 0.05, thus it can be said that there was no significant difference between the intervention group and the control group before being given treatment.

The Mann Whitney U test in the intervention group and the control group after being given treatment, the output "Test statistic" is known to have a P value of 0.011 <0.05. Thus it can be said that there was a significant difference between the intervention group (giving soy milk and Fe tablets) and the control group (giving only Fe tablets). Because there is a significant difference, it can be said that H0 is rejected, therefore "Giving soy milk is effective in increasing hemoglobin (Hb) levels in female adolescents."

Based on the results of the study, the intervention group after being given treatment found that the female adolescents who experienced anemia experienced an increase in hemoglobin (Hb) levels so that 15 female adolescents in the intervention group (100%) were no longer anemic. Likewise with the control group after being given the treatment it was found that the female adolescents who experienced anemia had an increase in Hb levels so 15 female adolescents in the control group (100%) were no longer anemic.

Anemia in adolescents is a condition in which the number of red blood cells/hemoglobin (Hb) in the blood is lower than the normal value, namely in young women. Anemia in adolescents will have an impact on impaired concentration which results in decreased learning achievement, susceptibility to disease due to decreased immunity, and lack of concentration when participating in learning at school.

Hemoglobin consists of the word "heme" and the word "globin", where heme is Fe and protoporphyrin is mitochondria, and globin is a chain of amino acids (1 pair of α chains and 1 pair of non-α). (Rosa 2015) Hemoglobin is a globular protein that contains iron. In humans, red blood cells are made in the spinal cord, then form the biconcave plate. Human red blood cells are made in the bone marrow. The process of Erythropoiesis starts with Multipotential stem cells. From several multipotential stem cells, unipotential stem cells are formed, each of which only forms one

type of cell, for example, erythrocytes. (Besuni, JAfar, and Indria 2013)

The process of formation of erythrosis is called erythropoiesis. Unipotential stem cells will begin to undergo mitosis while differentiating into erythrocytes when stimulated by erythropoietin. In addition to stimulating the proliferation of unipotential erythropoietin stem cells, it also stimulates further mitosis of promonoblast cells, basophilic normoblasts, and polychromatophilic normoblasts. The youngest erythrocyte cells that do not have nuclei are called reticulocytes which then turn into erythrocytes. In the process of forming red blood cells by erythropoietin in very small amounts it will stimulate committed unipotential cells to immediately divide and differentiate into proerytoblasts. (Besuni et al. 2013)

Two processes play a major role in the process of forming erythrocytes from unipotential stem cells, namely the formation of Deoxyribose Nucleic Acid (DNA) in the cell nucleus and the formation of hemoglobin in the plasma of erythrocytes. The formation of the cell cytoplasm and hemoglobin occurs simultaneously with the process of forming DNA in the nucleus as previously stated that hemoglobin is the most important element in the plasma of erythrocytes.

The hemoglobin molecule consists of globin, protoporfuin, and iron. Globin is formed around ribosomes whereas protoporphyrin is formed around mitochondria. Iron is obtained from transferrin. At the beginning of the nucleated erythrocytic cell, there is a transferrin receptor. Disturbances in the binding of iron to form hemoglobin will result in the formation of erythrocytes with small plasma (microcytes) and less hemoglobin in them (hypochrome). The failure of the cytoplasm of nucleated erythrocytes to bind Fe for the formation of hemoglobin can be caused by low levels of Fe in the blood. This can be caused by malnutrition, impaired absorption of iron (especially in the stomach), and increased iron requirements (pregnancy, bleeding, and so on).

The cause of failure of nucleated erythrocytes to bind iron can also be caused by low levels of transferrin in the blood. This is understandable because both nucleated and reticulocyte erythrocytes only have transferrin receptors, not fe receptors. It should be noted that only fe elemental can bind to transferrin and to form 1 ml of packed red cells, 1 mg of fe element is required. The best source of protein, vitamins, minerals, fat, and fiber, but soybeans are more often processed into food ingredients, namely tempeh or tofu, and used to make beverages such as soy milk. (Valentina et al. 2021)

Milk is a food product that is almost perfect in nutritional content and is highly recommended for consumption, especially by children who are in their infancy. The main component of milk is fat (3.9% is dominated by saturated fat); milk protein 3.4%; lactose 4.8%; ash 0.72%; and water 87.10%. Milk from these animals contains animal fat which can increase cholesterol levels so it is not recommended to consume it excessively, especially for someone who suffers from certain diseases and is allergic to animal protein. To meet these protein needs can be met with foods derived from soybeans. One of the processed soy products is soy milk.

Soy milk protein has almost the same amino acid composition as cow's milk so soy milk is often used as a substitute for cow's milk for those who are allergic to animal protein. (Budimarwanti 2017) Soy protein contains 18 amino acids, namely 9 types of essential amino acids and 9 types of nonessential amino acids. The essential amino acids include cystine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. The 6 nonessential amino acids include alanine, glycine, arginine, histidine, proline, tyrosine, aspartic acid, and glutamic acid. In addition, soy

protein is very sensitive to physical and chemical treatment. (Martono et al. 2016)

This is in line with the previous research conducted by Nurmalia Rizki and friends in 2022 entitled "The Effect of Soy Milk on Increasing Haemoglobin (Hb) Levels of Young Girls at SMA Negeri 1 Perhentian Raja Kampar" There was an increase in Hb levels in subjects given soy milk because milk Soybean contains 35-40% protein, 90% of which is stored in 2 forms of protein globulin, namely 11S glycinin and 75 β-conglycinin. Glycinin has an A (acidic) subunit and a B (basic) subunit, while β-conglycinin has α and β subunits. This protein contains all the essential amino acids so soy products are almost similar to animal-based foods in terms of protein quality, but with lower levels of saturated fat and no cholesterol. (Rizki and Wiji 2022)

Soy milk protein has an amino acid composition that is almost the same as cow's milk so soy milk can be used as a substitute for cow's milk for people who are allergic to animal protein. The weakness of soy milk is that it doesn't last long so the nutrition and taste change. Damaged soy milk is characterized by a change in smell, color, or taste, or the liquid thickens and then separates the water from the sediment of the soymilk. (Mawarni, Anggraini, and Jumari 2018)

The method of preserving soy milk so that the milk is not easily damaged and lasts longer is cooling and heating the milk. Preservation of milk by heating method can be done by pasteurization and sterilization. There are 3 common pasteurization methods for milk, namely: Low-Temperature Long Time (LTLT), High-Temperature Short Time (HTST), and Ultra High Temperature (UHT). (Mawarni et al. 2018)

Soy sauce can be served in its pure form, meaning without the addition of sugar and new flavors. You can also add sugar or flavor (essence/taste) such as mocha, pandan, vanilla, chocolate, strawberries, and others. The amount of added sugar is usually around 5-7 percent by weight of soymilk. To improve children's taste, the sugar content can be increased to 5 - 15 percent. But the recommended sugar content is 7 percent. A sugar content of 11 percent or more causes satiety quickly. (Koswara et al. 2017)

Liquid soy sauce can be made using simple technology and equipment that does not require high skills, or with modern technology in factories. Today many ways can be used to make liquid soy sauce with good results. Soymilk is stored at a maximum cold temperature of 10ºC or refrigerator temperature. The storage and transportation stage at a maximum temperature of 10ºC before consumption of soymilk is a critical control stage because there are opportunities for microbial growth if the temperature and time are. (Koswara et al. 2017)

CONCLUSIONS

Based on the results of the research and discussion that has been carried out, the conclusions of this study are. The average hemoglobin (Hb) level of anemic adolescent girls before being given treatment in the intervention group was 10.833, and in the control group was 10.987 in the work area of the Cihideung Health Center, Tasikmalaya City. The average hemoglobin (Hb) level of anemic adolescent girls after being given treatment in the intervention group was 13,200, and in the control group was 12,860 in the working area of the Cihideung Health Center, Tasikmalaya City. There are differences in hemoglobin levels between the intervention group and the control group in mild anemia of female adolescents in the working area of the Cihideung Health Center, Tasikmalaya City

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ORIGINAL RESEARCH

THE EFFECTIVENESS OF HEALTH EDUCATION USING VIDEO MEDIA ON KNOWLEDGE OF PULMONARY TB PREVENTION AT NURSING STUDENT IN WAMENA

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ABSTRACT	Keywords
Indonesia is the fifth country in Southeast Asia with the most cases of pulmonary TB. Papua is one of the provinces with a high incidence of pulmonary TB. One of the efforts to reduce the number of pulmonary TB is providing health education about tuberculosis prevention efforts using audiovisual media. This study aims to determine the effectiveness of health education using video media on knowledge of pulmonary TB prevention. The research used the design of The One Group Pre Test – Post Test, with the type of research being Quasi Experiment. It was carried out in the Wamena Nursing DIII Study Program with a sample of 32 respondents. Respondents were given a pre-test questionnaire and a health education intervention using video. After ten days of providing health education, respondents were given a questionnaire (post-test). Statistical analysis using Wilcoxon. The results showed a significant increase in knowledge about pulmonary TB prevention between the pre-test and post-test (p=0.000). It was concluded that health education using audiovisual media was more effective in providing information on the prevention of pulmonary TB.	*Health Education, Knowledge of Prevention, Pulmonary TB, Video Media*

INTRODUCTION

Pulmonary TB is a disease transmitted by the bacteria type Mycobacterium tuberculosis. The disease ini attacks the lungs, and other body organs can also be attacked. If pulmonary TB is not treated, it can harm the sufferer to cause complications and even death. Indonesia is the fifth country in Southeast Asia with the most pulmonary TB cases. Jumlah pulmonary TB cases in Indonesia reached 511,873 people consisting of 294,757 men and 217,116 women. The results of tuberculosis case discovery Case Notification Rate (CNR) coverage (193 per 100,000 population. Papua is a province with a high incidence of pulmonary tuberculosis. The number of tuberculosis cases of all types reaches 10,813 (men 5,836 people and women 4,977 people), with CNR reaching 325 per 100. 000 population (Kementerian kesehatan RI, 2018). Meanwhile, pulmonary TB in Siepkosi Village, Jayawijaya Regency, ranks third after ISPA, which is 15.15%. It is related to the local culture of the local community where most of the residents live in honai, which does not have as much as 63.60% ventilation.

The role of nurses as educators is to provide counseling and health counseling in nursing services and care in every health service order so that the community can maintain and improve its health status. Health counseling on pulmonary TB prevention measures is one of the roles of nurses in carrying out their duties and functions as an educator role (Novita, 2012).

Audiovisual media is a tool for conveying messages so that information and materials about health can be provided to groups or communities. A video is an extension tool that can display messages and movements, using special effects to strengthen the learning process and attract audience interest (Notoatmodjo, 2012). Astuti's research also showed that there is a relationship between attitudes and knowledge with efforts to prevent pulmonary TB, with a value of (p<0.05) (Astuti S, 2013). Another study by Megawati showed that respondents' knowledge level in carrying out tuberculosis prevention measures increased after being given counseling using video media (Megawati M & Sulistyaningsih S, 2017). Based on this, researchers are interested in conducting research on students of the Wamena Nursing DIII Study Program to determine the effectiveness of health education using video media on knowledge of Pulmonary TB prevention.

METHOD

Research used the design of The One Group Pre Test–Post Test, a type of Quasi-Experimental research, without using a control group, but already carried out (pre-test) the first observation that allows testing for changes – changes after the experiment (Sulistyaningsih, 2011). The initial stage is carried out Pre-Test, after which health education is provided through video media. At the final stage, a Post Test is carried out. The research was conducted on July 19 – August 13, 2021, at the Wamena Nursing DIII Study Program. The population in this study was second-semester students totaling 80 students with a total sample of 32 respondents—probability sampling method with simple random sampling technique.

The research instrument used was a questionnaire regarding the prevention of Pulmonary TB disease. The questionnaire contains positive questions and a Likert scale with five answer choices. The measurement scale used for answering questions is if the answer is always given a score = 5, often given a score = 4, sometimes given a score = 3, rarely given a score = 2, and never given a score = 1. At the same time, negative questions have a measurement scale always given a score = 5, often given a score = 4, sometimes given a score = 3, rarely given a score = 2, and never given a score = 1. The counseling material was given in this study as an 8-minute animated video. The content in the video contains a narrative in the form of a definition and efforts to prevent TB Lung. The statistical test used is Wilcoxon to find out the difference in knowledge before and after receiving health education treatment with video media.

RESULTS

Table 1. Frequency distribution of respondent characteristics

Characteristics of Respondents		Sum	Percentage
Gender	Man	7	21.9
	Woman	25	78.1
Age	< 20 years	21	65.6
	≥ 20 years	11	34.4
Tribe	Papua	28	87.5
	Non Papua	4	12.5
Sources of Information	Never	20	62.5
	Ever	12	37.5

The results showed that the number of respondents was 32 respondents, of which men 7 people and women were 25 people. The majority of respondents aged < 20 years were 21 respondents (65.6%), with 12 respondents who had obtained information related to pulmonary TB prevention

(37.5%) and 20 respondents (62.5%) who had never obtained information

Table 2. Average Pre-test and Post-test Knowledge Scores

eHealth education with video media	Mean	SD
Before	71.62	6.786
After	78.59	5.369

The table above shows the average pre-test knowledge score of 71.62 and post-test of 78.59

Table 3. Knowledge before and after health education

Knowledge Level	Before health education		After health education	
	Sum	Percentage	Sum	Percentage
Less	0	0.0	0	0.00
Enough	22	68.8	8	25.0
Good	10	31.2	24	75.0

The results of measuring respondents' knowledge about tuberculosis prevention efforts before being given health education (pre-test) were good knowledge of 10 respondents (31.2%), sufficient knowledge of 22 respondents (68.8%). The results of knowledge measurement after being given health education (post-test) increased, with good knowledge of as many as 24 respondents (75.0%) and sufficient knowledge of as many as 8 respondents (25.0%).

Table 4. Differences in Pre-Test and Post-Test Knowledge in Pulmonary TB Prevention

Group	Wilcoxon Test	p Value
Pre Test *Post Test*	-4.013	0.000

The results of the analysis showed that there was a significant difference in knowledge in the prevention of pulmonary TB before health e-duction using video media. After health e-duction using video media with a p-value = 0.000

DISCUSSION

The results showed that majority of respondents aged < 20 years. The level of knowledge is influenced by age factors, including the ability to receive information. It is related to readiness for the receipt of information at a productive age and the weakening of information acceptance as a person grows older (Hasdianah, 2014). Respondents have never been informed about tuberculosis prevention. It is because respondents are less exposed to mass media, both electronic media and the internet. After all, many respondents still do not have television, radio, or Android phones. The public can obtain various kinds of information/materials, so if someone often gets information/material from the mass media, it will impact a person's knowledge level (Azwar, 2013).

The analysis showed a significant increase in the average knowledge score before and after receiving health education with video media. The increase in the value of knowledge shows that audiovisual media can be used continuously as a health education medium to provide information to groups or communities. This study is in line with Fadillah's research, which showed an average knowledge score before counseling of 16.94 and after counseling of 23.97, with a p-value = 0.000 (Fadilah et al., 2019). Massi's research also showed an average knowledge score with a median value before counseling of 24.00 and after counseling of 42.00 (Massi & Kallo, 2018). This research is also in line with the research conducted by Purniawan, where the results obtained there was a significant difference in the knowledge of tuberculosis patients between those who were given health counseling using audiovisual media during the pre-test and post-test. After being given counseling with video media (post-test) tends to be higher (mean = 20.0) than before being given health counseling with video media (pre-test) (mean = 17.6) (Purniawan, 2016). Video media is a medium that contains information for the learning process that

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contains material about concepts, procedures, and applications that aims to improve understanding of the material in the learning process presented in audiovisual form. Providing health education with audiovisual media can increase respondents' knowledge about pulmonary TB prevention efforts because respondents can hear and see the message conveyed so that respondents can more easily remember information. According to Azwar, health education is an activity carried out by delivering material or messages so that the public is aware, understands, and is willing to carry out the recommended health information.. (Azwar, 2013).

The results of the respondent's knowledge analysis of efforts to prevent tuberculosis with video media showed an increase in good category knowledge by 43.8%. The preceding shows that health information provided through audiovisual media can affect respondents' level of knowledge. According to Daryanto, students' ability to absorb and remember learning materials can increase meaningfully if learning activities are provided through audio and visual (Daryanto, 2016). It is in line with Juliana's research, which shows that tuberculosis prevention before counseling is given in the majority of the category is sufficient (56.7%), and after being given counseling in the majority of good categories (90%), with the conclusion that counseling provided through video media can increase tuberculosis prevention measures (Juliana & Sulistyaningsih, 2017). Syarif's research also concluded that audiovisual education improves knowledge and healthy family living behaviors about preventing tuberculosis transmission (Muhammad. et al., 2015). Another study by Suhendra showed that the level of knowledge of respondents in carrying out tuberculosis prevention measures increased after being given health promotion using video media (Suhendra et al., 2020). Health education provided through audiovisual media is considered exciting and easier to understand, so it can stimulate the brain and make it easier for a person to receive information (Haqiqi Ilham mardiantun, 2019). Media audiovisual emits audible sounds, observable colors, and moving images that will increase respondents' desire to participate in health education activities. One of the advantages of using audiovisual media is that it can be played repeatedly to provide clarity of message or information so that respondents easily remember the material or message conveyed.

The results showed that there was a significant difference in knowledge in the prevention of pulmonary TB before health e-duction with after education using video media. Health education using electronic media can affect a person's knowledge. It is shown by the results of research conducted by Khayati with the result that there is an influence of education on knowledge after health education with video media, namely Wilcoxon p-value 0.000 (Khayati et al., 2020). Adha's research showed a significant difference in the level of knowledge after being treated with video media, with Wilcoxon test results p=0.000 (Adha et al., 2016). In Kumboyono's research, there were differences in the effect of health counseling using audiovisual media on increasing the knowledge of tuberculosis patients, with a significance value of 0.009 (Kumboyono, 2011). Putri's research also influenced the level of knowledge and attitudes before and after the intervention using video media with a value of p = 0.000 (Putri et al., 2021). Media audiovisual as health education media is a health promotion media approach by combining moving images and text messages accompanied by voice will attract more children (Maemunah et al., 2021). Audiovisual media is considered more effective than other media because it has sound, moving images, and observable objects, as well as messages/information conveyed through video in the form of live images that can be observed on a monitor or through a projector so as to increase respondents' interest in participating in counseling and increase understanding which has an impact on increasing respondents' knowledge.

CONCLUSIONS

The knowledge of respondents before being given health education with video media, had sufficient knowledge, and

after being given health education with video media increased, namely most of the knowledge was exemplary. Health education using audiovisual media is more effective in providing information to respondents. This research is expected to provide input to teaching staff and students in developing learning media for the lecture process by making audiovisual media as an alternative in providing health education about efforts to prevent Pulmonary TB

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DURATION OF GADGET USE AND FINE MOTOR DEVELOPMENT IN FOUR YEARS CHILDREN AT PUTRA BANGSA PRE-SCHOOL

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ABSTRACT	Keywords
Gadget is a modern device which used as a means of communication and many more functions either for children or adults, and can make addicted. It also has influences to development of children's soft motoric nerves. The objective of this research is to know the relation between gadget usage duration and soft motoric nerves development of 4 years old children in PAUD Putra Bangsa Wajak Lor, Tulungagung Regency.The design of this research was correlational analytics with cross-sectional approach. The population was all of PAUD Putra Bangsa Wajak Lor and and 24 respondents were taken as samples by purposive sampling technique. The independent variable was the duration of gadget usage, and obtained from questionnaires, and the dependent variable was the development of 4 years old children's soft motoric nerves which obtained from observation. The data analyzed with Spearman Rank Test. The research result were almost all of the respondents or (62.5%) used gadgets the most frequently (66.7%) of the respondents developments of soft motoric nerves were suspected. There was a negative and strong relation between gadget usage duration and the development of 4 years old children's soft motoric nerves (Spearman Rank, p value 0.000 < 0.05, Correlation Coefficient : -0.668). The conclusion was the higher the duration of the use of gadgets then the development of 4 years old children's soft motoric nerves in the suspect category, so that need role existence parents for the limit duration usage gadgets on child.	*Gadget usage, the children's soft motoric nerves, 4 years old children.*

INTRODUCTION

Gadgets are one of them the most modern technology and that can accepted in all circles society and create its use can dependency , fine mature nor children (Velika , 2015). Most child child misuse gadgets to matter something missing _ beneficial like playing games, watching YouTube , that's all child tend to be lazy to learn . This is what can be done influence fine motor development in children, increasingly Good anal fine motor movements are increasing get creative like scissor coloring and painting (Santoso, 2012). At PAUD Putra Bangsa Wajak Lor Boyolangu use of gadgets in children Still high . Many parents report that child cry if the gadget taken . Prevalence child age preschool suffer disturbance growth morotic worldwide fine reaches 5-12 % . In Indonesia prevalence fine motor development amounting to 13-18%, which means that in Indonesia around

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80% of children child using gadgets as means playing (Aisyah, 2015). Prevalence motor development in Java East that is 42.1% of children age pre school with exposure to gadgets Enough high From results studies Preliminary at PAUD Putra Bangsa Wajak Lor Boyolangu Tulungagung out of 10 parents , 9 parents reported it that his son At home hold *gadgets* For game nor watch videos on *YouTube* . Introduction child to gadgets usually started from method distract parents _ with method shows the games and videos on the gadget later child become dependency with gadgets that will affects fine motor skills in children (Nurmasari , 2016). Motor fine is movement that uses part muscles smooth , because No need functioning power _ For do movement . By Because That parental role _ to child must always done like invite child For study , draw as well as coloring . Don't to parents _ rely on gadgets to accompany children and parents let more children _ prioritize gadgets _ No troublesome parents . _ Playtime _ child must useful use _ like child play while study , during child Can copy Act adult behavior , developing _ Power imagination and power creativity (Santoso, 2015).

Duration use of gadgets in children that is One or two hours per day and prevent exposure medical screen in children age under 5 years old . The use of gadgets at the age of 4 years is called excessive when its use more from 1 hour (Loebis R, 2016). Observation to child 4 years old frequency use gadgets at least 1 to 3 days per week , meanwhile duration Minimum gadget usage is 5-15 minutes per day and a maximum of 5 hours per day . Average _ child use gadgets 1 to 3 days per week and 20 to 30 minutes per day . If the use of the gadget is appropriate with specified duration _ so motor development in children will experience progress . Progress fine motor development specifically extremities on progresses in a proximodial direction at the start from the shoulder towards direction distral until finger . Fine motor skills influenced by maturity motor function and coordination good neuromuscular , accurate visual function and progress _ intellect non-verbal .

Objective study This For know connection duration use gadgets with fine motor development in children 4 years old at PAUD Putra Bangsa Wajak Lor Regency Tulungagung.

METHOD

Study This carried out at Putra Bangsa PAUD Wajak Lor Regency Tulungagung . Type study This is alytic correlational with approach *cross-sectional design* . Population on study This is all over child 4 years old at PAUD Putra Bangsa Wajak Lor Regency Tulungagung , numbering 25 children . Taking sample on study This done with technique *purposive sampling* . Amount sample on study This is 24 respondents Which fulfil criteria inclusion And exclusion . Instrument Which used For collection source data on study This is sheet created questionnaire _ itself by the researcher with a total of 5 objective questions For know duration use of finished gadgets No need to test validity and reliability before used For data collection and research . Deep data analysis study This use approach *Spearman Rank test.*

RESULTS

1. **Characteristics Respondent Based on Type Gender in 4 Year Old Children at PAUD Putra Bangsa Wajak Lor Tulungagung**

   Table 1 Distribution frequency respondents based kind gender at Putra Bangsa PAUD Wajak Lor

No	Type Sex	Frequency	Percentage
1	Man man	11	45.8
2	Woman	13	54.2
	Amount	24	**100.0**

   Based on table 1 is known part big respondents manifold sex female 13 respondents (54.2%) out of a total of 24 respondents

2. **Identification Respondent Based on Duration Usage Gedget in 4 Year Old Children at PAUD Putra Bangsa Wajak Lor Tulungagung**

   Table 2 Distribution frequency respondents based on duration use of gadgets in PAUD Putra Bnagsa Wajak Lor

No	Duration	Frequency	Percentage
1	Low	6	25.0
2	Currently	3	12.3
3	Tall	15	62.5
	Amount	**24**	**100**

Based on table 2 is known part big duration use of gadgets in children 4 years old incl in category tall that is as many as 15 respondents (62.5%).

3. **Identification Respondent Based on Development of 4 Year Old Children at PAUD Putra Bangsa Wajak Lor Tulungagung**
Table 3 Distribution frequency Based on Fine Motor Development in 4 Year Old Children at PAUD Putra Bangsa Wajak Lor Tulungagung

No	Development Motor Fine	Frequency	Percentage
1	Normal	8	33.3
2	Suspect	16	66.7
3	No can tested	0	0
	Amount	**24**	**100**

Based on table 3 is known part big respondents have fine motor development child 4 years old including suspect category , namely as many as 16 respondents (66.7%).

4. **Connection Duration Usage Gedget With Fine Motor Development in 4 Year Old Children at PAUD Putra Bangsa Wajak Lor Tulungagung**
Table 4 Tabulation cross Connection Duration Condemnation Gedget with development Motor Gentle on children 4 years old

		Development Motor Fine							
		Normal		Suspect		No Can Tested		Amount	
		F	%	F	%	F	%	F	%
Duration use of gadgets	Low	6	100	0	0	0	0	6	25.0
	Currently	0	0	3	10	0	0	3	12.3
	Tall	2	13.3	13	86.7	0	0	15	62.5
Amount		8	3	1	6	0	0	2	1

	3.3	6	6.7		4	00
Spearman Rank Correlation	-0.0668				
P-Value	0,000				

Based on table 4 above is known there is connection between duration use gadgets with fine motor development in children 4 years old at PAUD in Putra Bangsa Wajak Lor Regency Tulungagung (spearmen p = value 0.000 < 0.05 then Ho is rejected . Correlation show that direction correlation negative with strength connection including in category strong . (Coefficient : -0.0668) so if duration children's gadget use tall so fine motor development child 4 years old in suspect category .

DISCUSSION
1. **Identification Respondent Based on Duration Usage Gedget in 4 Year Old Children at PAUD Putra Bangsa Wajak Lor Tulungagung**
Based on table 2 is known part big duration use of gadgets in children 4 years old incl in category tall that is as many as 15 respondents (62.5%). Gadgets are tool electronic size small who have function special and practical.Gadget formerly only used by groups intermediate to above , now there are lots of gadgets used by all circles , no exception children (Gayatri, 2011). Influencing factors _ The use of gadgets is increasingly gadgets day the more sophisticated , in fact No aware of gadgets making dependency (Gayatri, 2011). Soplanit (2015) stated that must There is limit time The use of gadgets is increasingly gadgets day the more sophisticated , in fact No aware of gadgets making dependency . On research This limit time playing gadgets is guided by the Association Pediatricians of the United States and Canada mentioned new born child arrives with 2 years old so No introduced with gadgets, temporarily For children aged 3-5 years _ can

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introduced the gadget with duration 1 hour per day . Children aged 6-18 years only permitted For playing gadgets for around 2 hours per day . In table 2 above show that Most _ respondents has know and use gadgets and use gadgets in categories high duration . _ That thing contradictory with those recommended by the Association Pediatricians of the United States and Canada . Limitations to child in playing gadgets is a must implemented by parents , implementation the should in accordance with the rules put forward above . The use of gadgets has impact influence positive and negative towards use his especially in young children _ in stages age under 5 years old pattern he thought Still in stage development . Parents _ should follow participate in activity play and learn child , so child forget will the gadget and get used to it without gadgets. Basically _ stimulation sensory motor like holding and touching surface smooth and rough , running , jumping , moving free , listen various type sound , as well socialize with other people can optimizing development brain children (Imron , 2018).

2. **Identification Respondent Based on Development of 4 Year Old Children in PAUD Putra Bangsa Wajak Lor Tulungagung**
Based on table 3 is known part big respondents have fine motor development child 4 years old including suspect category , namely as many as 16 respondents (66.7%).
Development motor is development control body movements through coordinated activities between arrangement nerves center, nerves and muscles. Stage development This aimed at children can understand self Alone nor understand other people, the means child capable identify what 's there in his mind, what he feels and wants, as well capable put self from glass other people's eyes. Interview with some parents whose children own development social emotional less,

they say that Correct child No Want to free from the gadgets, even when There is friend who invited him playing, he refuse and choose use up the time For playing with gadgets. Agree with research by Pebriana (2017) suggests that compared to must play with his friend , son more interested For playing with gadgets, p That because lots of games available downloaded with easy and more pleasant so that child No interested in existing games around it .

3. **Connection Duration Usage Gedget With Fine Motor Development in 4 Year Old Children at PAUD Putra Bangsa Wajak Lor Tulungagung**
Based on table 4 above is known there is connection between duration use gadgets with fine motor development in children 4 years old at PAUD in Putra Bangsa Wajak Lor Regency Tulungagung . That thing prove that play gadgets with long duration has impact bad for children so that can lower Power concentration as well as increase dependency on gadgets. Research by Damayanti et al., (2020) says that playing with gadgets effective make child more emotional and aggressive moment disturbed when playing with gadgets, lazy about studying , and can influence connection socially , children also feel isolated by the environment around Because seldom interact , as well make child No care and lack responsive to environment surroundings . The output results of the Spearman Rank correlation test can be seen in table 4, which proves exists relationships and interrelationships between duration playing gadgets with development motor emotional child 4 years old . That thing proven from the SPPSS *Spearman Rank Correlation* statistical test (P-value 0.000 < 0.05 then Ho is rejected . Correlation show that direction correlation negative with strength connection including in category strong . (Coefficient : -0.0668) so if duration children's gadget

use tall so fine motor development child 4 years old in suspect category . Which means level strength or closeness between duration playing gadgets with development social emotional child correlated strong . Statement the based on guidelines strength relationship (Correlation Coefficient) which states level connection between variable correlated strong .

Impact bad other from use of gadgets , namely lack of socialize , child more choose play with the gadget compared to must play game traditional together his friend. Therefore that's a lot We meet children in difficulty in concentrate because brain child Already dominated by the digital world (Ameliola & Nugraha , 2013). Because that, old man role active For observe and control child in development very fast technology, without parental supervision _ will give rise to a number of impact negative like case lower interpersonal skills and children more relying on gadgets rather than abilities himself itself (Nafaida et al., 2020). Following is a suggestion for children spared from impact Gadget negatives, that is with give limitation time as recommended by the American Academy of Pediatrics (APP), accompanying child when use gadgets and control spectacle seen child , invite child For play useful game For grow the flowers, too avoid playing with gadgets in front children (Rahayu et al., 2021).

Recommendation use of gadgets according to the American Academy of Pediatrics (APP), namely For No introduce gadgets to older children under 18 months , and gadgets are allowed introduced moment child 18-24 months old However recommended For watching quality programs, next No recommended use more gadgets from 1 hour per day For child range 2-5 years old, temporary 6 year old child

to the top constant use of gadgets limited so that No bother other activities and habits (IY Sari, 2019). Based on interview to some parents/ guardians they say that child No use gadgets for activity academic , but For playing games or watch video YouTube . Because that , old man must accompany child moment playing gadgets, directing For open appropriate features with his age. Use appropriate gadgets portion like case For watch learning videos can increase knowledge child and improve various aspect development , like increasing cognition, language, and increasing development social emotional children (Ayu et al., 2020).

CONCLUSION

Research results This show exists connection anatraa duration use gadgets with Fine motor development in 4 year old children at PAUD Putra Bangsa Wajak Lor Regency Tulunaggung . That thing proven from the SPPSS *Spearman Rank Correlation* statistical test (P-value 0.000 < 0.05 then Ho is rejected . Correlation show that direction correlation negative with strength connection including in category strong . (Coefficient : -0.0668) so if duration children's gadget use tall so fine motor development child 4 years old in suspect category . which means level strength or closeness between duration playing gadgets with development social emotional child correlated strong. Statement the based on guidelines strength relationship (Correlation Coefficient) which states level connection between variable correlated strong .

SUGGESTION

For Respondents, Parents should limit duration use of gadgets in children her breasts are increasing tall duration children's gadget use It's also getting lazier to do it learn .

For Profession Nursing, Health workers especially nurse have role important For give counseling to parents _ about development child in a way sustainable

For Researcher Next, Expected can used

as material or comparison for researcher the following is related with problem fine motor development in children 4 years old. Researcher furthermore can research more deep about lateness fine motor development with use other variables that are expected influence motor development smooth

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ORIGINAL RESEARCH

AUTHORITATIVE PARENTING AND THE DEVELOPMENT OF PRE - SCHOOL AGE CHILDREN AT AL-AMIN KINDERGARTEN, MOJOROTO KEDIRI

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ABSTRACT	Keywords
Preschool is an important period in a child's development. In reality, not all children can go through their growth and development period optimally because they experience disturbances in the growth and development process and various other factors. Parental parenting styles in child development really help children achieve and undergo normal growth and development according to their age level. This research aims to determine the relationship between parenting patterns and the development of preschool children at Al Amin Kindergarten Mojoroto Kediri. This research uses a cross sectional approach. Sampling used a total sampling technique with a total sample of 48 respondents (parents and children). The data collection technique was carried out by distributing parenting style questionnaires and observing the child's development. The data results were processed using univariate and bivariate analysis (Chi-Square). The research results showed that 43 (89.6%) mothers implemented a democratic parenting style and 21 (43.8%) children had development appropriate to their age. Based on the results of data processing, there is a relationship between parenting patterns and the development of preschool children at Al Amin Kindergarten Mojoroto Kediri (p-value 0.013). Based on this research, teachers are expected to carry out regular development assessments every year and provide education to parents about how to apply parenting styles and how to stimulate children's development so that activities to stimulate children's growth and development can be carried out in a coordinated manner in the form of a partnership between teachers and parents.	**Authoritative Parenting, Child Development, Preschool**

INTRODUCTION

Children are an inseparable part and are the fruit of love from their parents. In child development, there is a critical period, namely the period when children are under five years old. In the first five years of life, the child's growth and development process runs very rapidly and optimally, that is, children really need stimulation or stimuli that are useful for their development. Children's development is greatly influenced by the environment and interactions between children and their parents. Child development will be optimal if social interactions are in accordance with the child's needs at various stages of development. Meanwhile, an unsupportive environment will hinder children's development. (Adrian 2013).

Children have the ability to learn faster than those at other ages. Children need love and nurturing to foster a sense of security and trust which will later develop into a sense of trust as they grow. Children will grow, learn and develop quickly if they receive affection, love, attention, encouragement and mental

stimulation. Understanding the stages of child development will help parents understand what to expect and how parents can help children to grow and develop. Both parents and family members need to be involved in the care, upbringing, growth and development of children. Caregivers have a close relationship in the child's development process (UNICEF, 2010).

Parental love is one of the needs that children need to grow and develop as optimally as possible (*Narendra* , *et al* , 2008). One factor in child development is the nurturing environment. In the parenting role of parents, it is very important to monitor children so that children can grow and develop well. Parents need to know and recognize the characteristics and principles of a child's development. Interaction between children and parents is very beneficial for the child's overall development process. Children whose growth and development are good will ensure good survival for their future (Maryam, 2015).

Based on Sapril (2013), states that there is a relationship between parenting styles and child development at the age of 3-5 years. Parenting styles aim to ensure that children grow and develop optimally. In implementing parenting styles, parents need to pay attention to the uniqueness of their children. Children have unique characteristics from one child to another, so parents can apply several parenting patterns alternately to deal with children (National Population and Family Planning Agency, Family Development for Toddlers and Children, 2013). Parents play a role as the main educators in children's development. Children who receive good parenting will develop optimally. Early childhood education is coaching and training so that children have certain abilities that are needed in their lives, now and in the future. The success of children's education in a family is greatly influenced by how parents care for their children. Because the family is a forum for children to gain knowledge, experience and understanding (Siswanto, 2010).

The results of this research conducted by Aryana (2009) , stated that there was a significant relationship between maternal knowledge about child development and the gross motor development of children aged 4-5 years and a significant relationship between maternal knowledge and the fine motor development of children aged 4-5 years. Then the results of research conducted by Werdingsih (2012), stated that there is a relationship between the mother's role in fulfilling children's basic needs and the development of fine motor, gross motor and social personality in preschool children aged 3-6 years. Currently, various early detection methods to determine child development disorders have been created.

Likewise with screening to find out diseases that have the potential to cause developmental disorders in children. Early detection of a child's development is very useful so that treatment and recovery can be carried out earlier, so that the child's growth and development can take place as optimally as possible. Developmental screening is a routine procedure in checking children's daily growth and development which can provide clues as to whether there is something that needs attention. Children can be said to experience overall developmental delays when the child experiences delays in more than developmental domains (Soetijiningsih, 2012). Parenting is the interaction of children with parents who educate, guide and discipline and protect children to reach maturity with existing societal norms (Edwards, 2006). Children's interactions with adults and each other in the school environment can stimulate the child's development. The aim of this research is to determine the relationship between parenting styles and the development of preschool children.

Parenting styles are divided into 3 types, namely democratic, authoritarian and permissive parenting styles. Democratic parenting is a type of parenting in which parents balance affection and emotional

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support with structure and guidance in raising children. Children with this parenting style tend to be independent, have positive relationships with their peers and are more confident. Authoritarian parenting is a pattern of parenting that is coercive, harsh and rigid. In authoritarian parenting, parents make various rules that children must obey without knowing the child's feelings. Children with this parenting style can be shy, full of fear and tend to have difficulty being independent. Permissive parenting is a parenting style that does not care about children. Whatever the child wants to do is allowed. Children with this parenting style tend to be spoiled, very demanding, lack self-confidence and get easily frustrated (Edward, 2006; Santrock, 2007). The parenting style that parents apply to their children has quite a big influence on the child's life in the future. The parenting style used certainly varies between parents. Each parenting style has certain characteristics which result in a variety of child behaviors displayed. The correct parenting style can be achieved by providing loving attention to children and sufficient time to enjoy togetherness with all family members (Desmita, 2015).

The main aim of parenting is to maintain physical life and improve children's health, facilitate children to develop abilities in line with their developmental stages, and encourage increased ability to behave in accordance with the religious and cultural values they believe in. Parental parenting patterns regarding growth and development really help children achieve and undergo normal growth and development according to their age level (Supartini, 2012). Family care during the first five years of life greatly influences the 4 domains of development, namely motor, cognitive, language and socioemotional children. These aspects have a big influence on children's development and behavior in the future. Children can be said to experience overall developmental delays when the child experiences delays in more than two developmental domains

(Soetjiningsih, 2012). Parents' treatment of children influences children's attitudes and behavior. The process of implementing parenting styles for children cannot be separated from various elements such as discipline at home, determining punishments, as well as tolerance for the child's wishes and in terms of decision making. In raising children, parents tend to use certain parenting patterns. This personal social ability is influenced by the parenting style that parents apply to their children. If the parenting style applied is good then the child's personal social abilities are positive (Hurlock, 2012).

Parents play an important role in optimizing children's development. Parents must always provide encouragement or stimulation to children in all aspects of development, both gross and fine motor skills, language and social personality. Stimulation must be provided regularly and continuously with affection, play methods, etc. So that children's development runs optimally, lack of stimulation can cause delays in children's development (Ministry of Health, 2009).

Based on the problems above, the researcher is interested in conducting research related to the problem of the development of preschool aged children with the research title "The relationship between parenting patterns and the development of preschool children at Al Amin Kindergarten Mojoroto Kediri".

METHOD

research uses correlation analytics with a cross-sectional approach. Correlation analytical studies are techniques used to analyze the relationship between independent variables and dependent variables. This research design studies the relationship between parenting styles and the development of preschool children. Time and Place This research was conducted in January-February 2023 at Al Amin Kindergarten Mojoroto Kediri. The population in this study were all parents at Kindergarten Al Amin Mojoroto Kediri. The research instrument used was a questionnaire. The number and method of sampling used *Stratified Random Sampling* .

Sample criteria include inclusion criteria and exclusion criteria. Where these criteria determine whether or not the sample can be used. Inclusion criteria are criteria where research subjects represent research samples that meet the requirements as samples. The data analysis technique used was the *Chi-square test approach* .

RESEARCH RESULT

Table 1 Distribution of parenting patterns applied by parents to preschool-aged children at Al Amin Kindergarten Mojoroto Kediri

Parenting	Frequency	Percentage
Authoritarian	5	10.4
Democratic	43	89.6
Total	**48**	**100**

Table 2 Distribution of development in preschool age children at Al Amin Kindergarten Mojoroto Kediri

Development	Frequency	Percentage
In accordance	21	43.8
Doubtful	19	39.6
Digress	8	16.7
Total	48	100

Table 3. Distribution of the relationship between parenting styles and development in preschool children at Al Amin Kindergarten Mojoroto Kediri

Parenting	Development						Total		P Value
	In accordance		Doubtful		Digress				
	F	%	F	%	F	%	F	%	
Authoritarian	0	0	2	40	3	60	5	100	
Democratic	21	48.8	17	39.5	5	11.6	43	100	0.013
Total	**21**	**43.8**	**19**	**39.6**	**8**	**16.7**	**48**	**100**	

DISCUSSION

1. Description of parenting patterns applied by parents to preschool children at Al Amin Kindergarten Mojoroto Kediri

Based on the research data in table 1 regarding the parenting patterns applied by parents to preschool children, it is known that almost all of the 48 respondents applied democratic parenting, namely 43 (89.6%) mothers, while only a small portion applied authoritarian parenting, only taitu. as many as 5 (10.4%) mothers and no one applied a permissive parenting style. The results of this research show that the majority of parents apply a democratic parenting style to their children.

The results of this research are in accordance with Nofriyati (2016) who conducted research on parenting patterns and the development of pre-school age children in West Sumatra, explaining that the majority of parents have democratic parenting patterns, namely 34 mothers (81.0%). This is the same as research by Dewi and Pujiastuti (2012) which shows that the majority of parents (70.3%) in kindergarten in their research used

democratic parenting styles. Parenting is a pattern of interaction between parents and children. Parenting style is the way parents provide guidance, direct and encourage children on a daily basis (Edward, 2006).

The parenting style that parents apply to their children in life will have quite a big influence on life in the future. The parenting style used certainly varies from one person to another. Each parenting style has certain characteristics which result in a variety of child behaviors displayed. The correct parenting style can be achieved by giving loving attention to children, giving them enough time to enjoy being together with all family members (Desmita, 2015).

Based on research data that researchers have conducted, it is known that the majority of parents apply a democratic parenting style. This can be seen from research data that has been obtained through analysis of questionnaires because parents regulate all my child's activities, make rules that can be challenged by my child, supervise everything my child does, give reasons to the child if he forbids him from playing, respect the child's opinion. , monitor the child's progress at school, listen to the child's reasons when they make a mistake, not obey the child's wishes, require discipline in all the child's activities, and continue to punish or reprimand if the child makes a mistake. From the results of this research, it is known that the parenting style that many parents apply is democratic parenting. This shows that the child's parents prioritize the child's interests more, give the child the freedom to choose and take action, and their approach to the child is warm. According to Santrock (2007), parents with a democratic parenting style show love and warmth to their children. They must listen actively and attentively, and provide regular positive meeting time with children.

Parents build an open attitude between parents and their children when making mutually agreed decisions or rules, children are given the freedom to express their opinions, feelings and desires and learn to be able to respond to other people's opinions. Based on research data that researchers have conducted, it is known that a small percentage of parents apply an authoritarian parenting style. This can be seen from research data that has been obtained through analysis of questionnaires because parents regulate all children's activities, give whatever orders I want to children, make rules that cannot be challenged by children, supervise everything the child does, punish children if they not obeying the rules given, not supporting every activity the child does, missing out on every child's development, not complying with all my child's wishes, and requiring discipline in all my child's activities. From the research results, it is known that in this authoritarian parenting style, parents tend to force, order, and punish if the child does not want to do what the parents say. According to Santrock (2007), authoritarian parenting is parenting that is rigid, strict, dictatorial, lacking affection and sympathy, and forcing children to always follow their parents' orders without the need to explain to the child the purpose and reasons behind these rules.

Authoritarian parenting can have a negative impact on children, where children feel unhappy, afraid and have poor communication skills. This parenting style increases children's dependency, hinders the development of self-confidence because they do not learn to overcome their own problems and challenges or have everything provided by their parents and children feel inferior in the eyes of their siblings and friends (Wong, 2009). Based on the discussion above, the parenting style that is widely applied by parents at Al Amin Mojoroto

Kediri Kindergarten is democratic parenting.

This is because parents do not restrain or control children too much and still provide what the child needs. So in this case the appropriate parenting style given to children is democratic parenting.

2. **Description of Development in Preschool Children at Kindergarten Al Amin Mojoroto Kediri**
Based on research data in table 2 regarding development in preschool children, it shows that of the 48 respondents, 21 (43.8%) children had appropriate development, 19 (39.6%) children had doubtful development, and 8 (16.7%) children had doubtful development.) children with deviant development. The results of this research show that some children have appropriate development. The results of this research are in accordance with Nofriyati (2016) who conducted research on parenting patterns and the development of pre-school age children (3-5 years) explaining that the majority of children's development was according to development, namely 37 children (88%). This is the same as research by Dewi and Pujiastuti (2012) which shows that the majority of children (70.3%) develop according to their developmental stage. According to Hurlock (2012) children's development has a regular, sequential and predictable pattern. Each of these stages requires understanding and routine monitoring from parents. Preschool childhood is an important period in a child's development. During this period, the development of language skills, creativity, social awareness and intelligence proceeded very quickly and was the basis for subsequent developments.

According to Frankerburg (1981 in Supartini 2012) there are four developments in toddlers (preschool age), namely personality or social behavior (Personal Social), fine motor skills (fine motor adaptive), gross motor skills (gross motor), and language (Language). Child development can be seen from the child's ability to speak, play, count, read and others. Children's growth and development can also be seen from social behavior in the child's environment. Based on data from research that researchers have carried out, data is obtained that on average children have development that is appropriate to their age, where children can or are able to carry out several activities or stages according to their developmental age. Several stages that can be carried out by all children are that children can button their clothes, stand without holding on, can distinguish long lines, and point out the dimensions of a rectangular triangle shape. This shows that almost all stages or most of the tasks given can be carried out by children. In reality, not all children can go through their growth and development period optimally because they experience disturbances in their growth and development process. This is in accordance with research data where there are still children with doubtful and deviant development. This is because there are children who are unable to pass through or carry out more than 2 stages of development. Basically, there are several possibilities, such as it could be because the child is not able to carry out these stages or it could also be because the child is lazy about carrying out these stages. According to Soetjiningsih (2012), factors that influence children's development can be grouped into two, namely internal factors and external factors.

Internal factors consist of genetics and hormonal changes. Environmental (external) factors consist of two, namely prenatal and postnatal. Prenatal factors (during pregnancy), including nutrition, toxins, chemicals, infections, maternal immunological and psychological disorders. Postnatal factors include

maternal knowledge, nutrition, cultural environment, socio-economic status, physical environment, parenting environment (parenting patterns), stimulation in child development, and sport or physical exercise. Based on research results, it is known that almost some children already have appropriate development. However, there are still some children who have doubtful and deviant development. So it is necessary to monitor the child's development to determine whether there are problems in the child's development.

3. **The Relationship between Parenting Style and Development in Preschool Children at Al Amin Kindergarten Mojoroto Kediri**

Based on the results of statistical tests using the chi square test on the research data in table 3, it was found that the pvalue was 0.013 <α (0.05), then Ha was accepted, which means there is a relationship between parental parenting patterns and the development of preschool children at Al Amin Kindergarten Mojoroto Kediri. The results of this research explain that parenting styles can influence or determine how preschool children develop. The results of this research are in accordance with research conducted by Yani (2012) which shows that there is a relationship between parenting patterns and the personal social, motor and language development of preschool children. The same thing as Fatimah's (2011) research shows that there is a relationship between parenting styles and child development. Research by Dewi and Pujiastuti (2012) also shows that there is a relationship between parents' parenting styles and the development of preschool children. Parental parenting styles in child development really help children achieve and undergo normal growth and development according to their age level (Supartini, 2012). Parents' treatment of children will influence the child's attitudes

and behavior. In raising children, parents tend to use certain parenting patterns. This personal social ability will be influenced by the parenting style that parents apply to their children. If the parenting style applied is good then the child's personal social abilities will be positive (Hurlock, 2012).

Family care during the first five years of life greatly influences the 4 domains of development, namely motor, cognitive, language and socioemotional children. Parents must always provide encouragement or stimulation to children in all aspects of development, both gross and fine motor skills, language and social personality. So that the child's development runs optimally, lack of stimulation can cause delays in the child's development. Children can be said to experience overall developmental delays when the child experiences delays in more than two developmental domains (Soetjiningsih, 2012 and Indonesian Ministry of Health, 2009).

Based on the research data in table 1, it shows that of the 5 parents who implemented an authoritarian parenting style, the majority of children experienced deviant development, 3 children (60%) and a small number with doubtful development, 2 children (40%). The results of this research explain that children who are raised with an authoritarian parenting style tend to have children with doubtful and deviant development. This can be due to the criteria or characteristics of an authoritarian parenting style which is quite harsh on children and overly protective of children and punishes them if they make mistakes. Based on research data, it is known that children who experience doubtful and deviant development in authoritarian parenting are because children are often scolded by their parents if they make mistakes. While making observations, there were parents who shouted at their children when they couldn't do steps such as standing on one

leg. Apart from that, children are afraid that doing something will be wrong or not according to their parents' wishes, so in this case children sometimes during their development stages are hesitant about doing it so they can't do it. According to Edward (2006), authoritarian parenting is parenting that is rigid, strict, dictatorial, lacking affection and sympathy, and forcing children to always follow their parents' orders without the need to explain to the child the purpose and reasons behind these rules. Parents get emotional and angry if their children do things that are not what their parents want. Children often receive mental and physical punishment for the reason that they continue to remain obedient and disciplined and respect the parents who have raised them. So, in this case, authoritarian parenting can cause delays in children's development due to poor psychological needs and stimulation of children's development.

Based on the research data in table 3, it shows that of the 43 parents who implemented democratic parenting, it was found that almost half of the children had appropriate development, 21 respondents (48.8%), and only a small number of children had doubtful development, 17 children (39.5%).) and deviant development in 5 children (11.6%). The results of this research show that children with democratic parenting can have appropriate development. However, it is also possible that children may experience doubtful and deviant development. This is because each parent's parenting style is different, apart from that there are other factors that can influence a child's development.

According to Desmita (2015), democratic parenting is a parenting style that prioritizes the interests of children, but does not hesitate to control them. Parents with this parenting style are rational, always basing their actions on ratios or thoughts. This type of parent is also realistic about their child's abilities, not having excessive expectations that exceed the child's abilities. This type of parent also gives children the freedom to choose and take action, and their approach to children is warm.

According to Hidayat (2008), children's basic needs for development are classified into three, namely asuh (physical-biomedical needs), asih (emotional and affectional needs), and asah (mental stimulation needs). This is in accordance with a democratic parenting style that prioritizes children's interests and provides affection (warmth), but does not hesitate to control them (control). So in this case parents with a democratic parenting style tend to have children with appropriate development compared to children who are raised with an authoritarian parenting style. This is because democratic parenting is a parenting style that provides extra strict supervision of children's behavior, but they are also responsive. As a result of the research that researchers have conducted, it is known that parents with democratic parenting have children with doubtful and deviant development. This can be caused by various factors related to children, parents and the environment.

According to Soetjiningsih (2012), factors that influence children's development can be grouped into two, namely internal factors and external factors. Internal factors consist of genetics and hormonal changes. Environmental (external) factors consist of two, namely prenatal and postnatal. Prenatal factors (during pregnancy), including nutrition, toxins, chemicals, infections, maternal immunological and psychological disorders. Postnatal factors include maternal knowledge, nutrition, cultural environment, socio-economic status, physical environment, parenting environment (parenting patterns), stimulation in child development, and sport or physical exercise. The existence of

children with doubtful and deviant development in parents with democratic parenting styles may be because not all children can go through their growth and development period optimally because they experience disturbances in their growth and development process. This is caused by various factors such as children's health, children's motivation in carrying out developmental tasks, stimulation of parents' knowledge regarding parenting patterns, and so on. Apart from that, children with doubtful and deviant development have parents with democratic parenting styles because some of these children are not directly cared for by their parents.

Based on the results of the interview, it is known that there are 5 children who are cared for by their grandmother and 3 children are looked after by their maid. Children who are cared for by non-parents directly know that they rarely pay attention to how their children are developing, can do anything, rarely stimulate their children to do something and parents are too busy with their work where both parents work and leave in the morning and come home in the afternoon . In addition, it is known that children with deviant development have asthma from infancy. Based on education, it is known that parents with a democratic parenting style who have children with doubtful and deviant development are parents with junior high school education. This shows that parents' low level of education can influence how to stimulate children's development, so that this causes children to experience problems in their development. This is because parents do not know how to stimulate children's development properly and correctly.

According to Desmita (2015), democratic parenting is a parenting pattern that is often applied by parents, but in this case democratic parenting has several advantages and disadvantages. The disadvantage of this parenting style is that in this parenting style the parents still use a high level of control or supervision over the child but can also give the child freedom because they feel that the child does not need to be restrained all the time. Children are trained to be responsible for their children where disciplined parents are able to show their responsibility in the form of being brave enough to take risks for the consequences of decisions that have been taken. Good parenting patterns by expressing affection (hugging, kissing, and giving praise), training Emotions and controlling children result in children feeling cared for and more confident, so that this forms a good person. This has a big influence on the child's good development from an early age, including personal social development, fine motor skills and gross motor skills. Children who feel cared for and loved by their parents have no fear of hanging out with other people, children are more expressive, creative, not afraid to try new things so that children's development, especially children under 5 years of age, is maximized (Soetjiningsih, 2012).

According to Junaidi (2010), this democratic parenting style can run effectively if it fulfills three conditions, namely (1) parents can carry out their function as parents who provide opportunities for children to express opinions, (2) children have mature attitudes, namely they can understand and respecting parents as the main figures who continue to lead their families, (3) parents learn to give trust and responsibility to their children. So in this case, if parents provide love, and parents also give freedom to children who are not controlled, this can affect the child's development. The normal development pattern between one child and another is not always the same, because it is influenced by the interaction of many factors. Most of the factors that influence children come from the parents'

parenting style, parental stimulation, the child's health and how encouraged the child is to carry out these stages.

Based on the research above, it is known that parenting styles can determine or influence how preschool children develop. This is related to the parenting style of parents which is not too restrictive but still monitors needs and development, meets the child's needs and communicates with the child. So, in this case, a parenting style that is too restrictive to the child and does not pay too much attention to how the child's needs and development can influence the child's development is inappropriate.

CONCLUSION

Based on the research above, it shows that there is a relationship between parenting patterns and the development of preschool children at Al Amin Mojoroto Kediri Kindergarten with a p-value of 0.013 <α (0.05), it is known that parenting patterns can determine or influence how preschool children develop. This is related to the parenting style of parents which is not too restrictive but still monitors needs and development, meets the child's needs and communicates with the child. So, in this case, a parenting style that is too restrictive to the child and does not pay too much attention to how the child's needs and development can influence the child's development is inappropriate.

SUGGESTION

Independence must be taught to children from an early age, so parents should not limit their children from exploring their abilities and remaining focused. It is hoped that future readers or researchers will develop more interesting and better research. As well as being able to provide benefits regarding parenting patterns in developing the independence of early childhood.

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ORIGINAL RESEARCH

THE EFFECTIVENESS OF EDUCATION AND INFORMATION ON THE ANXIETY LEVEL OF PRE-ELECTIVE SURGERY PATIENTS AT HVA HOSPITAL, PARE, KEDIRI

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ABSTRACT	Keywords
Patients who undergo elective surgery are still anxious about the action that will be carried out when they enter the operating room, even though the surgeon has explained it as the Doctor Responsible for the Patient. The patient's anxiety in the operating room is characterized by frequent questions about the progress of the operation and a lack of cooperation when preparing a series of operations in the operating room. This research used a correlation research type, a Pre-Experimental research design with a population of elective pre-operative patients in the operating room at HVA Kediri Hospital. The total sample was 25 respondents using a sequential sampling technique. The data collection method used a questionnaire. Data were analyzed using the Wilcoxon test. The study results showed that before being given information and education to preoperative patients, almost half, 11 respondents (44%) experienced moderate anxiety. After being given information and education, it was found that the majority did not experience anxiety, 15 respondents (60%). There was a significant difference in anxiety between before and after being given education and information (p-value = 0.000; α <0.05). Education and information before the patient undergoes surgery can reduce the patient's anxiety level. Sufficient knowledge regarding the actions to be carried out means that the patient knows and does not ask questions about what will happen to him in the operating room.	Information, Education, Anxiety, Pre-operation

INTRODUCTION

In patients planning elective surgery, the patient should be calmer and more prepared because it was planned before the day of the operation. The reality is that many patients planning elective surgery are still anxious about their actions when they enter the operating room, even though the surgeon has explained it as a DPJP doctor (Patient Responsible Doctor). The patient's anxiety in the operating room is characterized by frequent questions about surgical operations and a lack of cooperation when preparing for

a series of operations in the operating room. Therefore, nurses' role as Bio-psycho-socio-spiritual care providers is necessary to educate patients about surgical procedures to reduce patient anxiety. It is hoped that patients will reduce their anxiety and cooperate with service procedures in the operating room. (Masood Jawaid, Civil Hospital, Karachi, Pakistan : 2006).

Based on the results of a pre-survey in the Surgical Inpatient Room at the Karanganyar Regional General Hospital in February 2018, the results obtained from interviews with 10

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patients with Preoperative, 8 (eight) patients with major surgical procedures said they experienced anxiety in facing surgery, this was confirmed by patient's statement that he often wakes up and has difficulty sleeping. Meanwhile, 2 (two) patients said they were not too afraid because they had given up. The age classification was 8 adults and 2 elderly, 6 female patients and 4 male patients (Primary Data, Karanganyar District Hospital, 2018). In research conducted by Anggraini (2014) at RSUP Dr. M. Djamil Padang stated that anxiety in preoperative patients was 33.9% mild anxiety, 46.8% moderate anxiety, and 19.4% severe anxiety.

Anxiety that arises in preoperative patients can impact the limb system. In the cardiovascular system, the patient feels palpitations, pulse, and blood pressure increase than usual. The respiratory system also experiences changes with an increase in breathing frequency. Anxiety also results in changes in behavior, feelings of wanting to urinate or defecate, and less cooperation during a series of preparations for surgery, for example, having to change into surgical gowns, moving to the operating room bed, and patients appearing nervous. If the patient's anxiety does not decrease, the operation will be postponed until the patient's condition improves or is no longer anxious. Therefore, there is a need for education and information for preoperative patients. Anxiety in preoperative patients can be overcome by increasing effective education and information.

It is hoped that there will be no fear and anxiety regarding the actions taken. Researchers propose to optimize the implementation of patient safety checklists in the treatment section, or what we usually call SSC (surgical safety checklist) (WHO, 2009). Because it contains the components of patient identification, surgical procedures, and the right person, and introducing the patient to the surgical team.

METHOD

This research used a correlation research type, a Pre-Experimental research design with a population of elective pre-operative patients in the operating room at HVA Kediri Hospital. The total sample was 25 respondents using a sequential sampling technique. The data collection method used a questionnaire. Data were analyzed using the Wilcoxon test.

RESULT

Table 1 Patient's Anxiety Before Giving Information and Education

Anxiety	n	%
Normal	4	16
Mild	7	20
Moderat	11	44
Severe	3	12
Panic	0	0

The results of the analysis based on Table 1 most respondents' anxiety before being given information and education was moderate anxiety, 11 respondents (44%).

Table 2 Patient's Anxiety After Giving Information and Education

Anxiety	n	%
Normal	15	60
Mild	7	28
Moderat	3	12
Severe	0	0
Panic	0	0

The results of the analysis based on Table 2 showed that most of the respondents' anxiety after being given information and education was normal anxiety, 15 respondents (60%).

Tabel 3 Diference of Anxiety Before and After Giving Information and Education

Anxiety	Before		After	
	n	%	n	%
Normal	4	16	15	60
Mild	7	20	7	28
Moderate	11	44	3	12
Severe	3	12	0	0
Panic	0	0	0	0
Hasil Uji Wilcoxon		$\rho=0.000$		

The results of the analysis based on Table 3 showed that there was a significant difference between preoperative anxiety before and after being given information and education (p-value = 0.000; α <0.05).

DISCUSSION
Anxiety Before Giving Information and Education
Surgical procedures are a form of medical therapy that can cause fear, anxiety, and stress because they can threaten the integrity of the body and soul and can cause pain (Rismawan, Rizal, & Kurnia, 2019). Anxiety is related to a state of worry in the form of fear or feelings of uncertainty or helplessness, as well as an emotional state that is unclear about the specific object (Ashari., Pongsifeld., & Mikhrunnisai., 2019). Anxiety is often described as a feeling of uncertainty, doubt, helplessness, restlessness, worry, unease which is often accompanied by physical complaints (Azizah et al, 2016).

Anxiety that arises in preoperative patients can have an impact on the limb system. In the cardiovascular system, the patient feels palpitations, pulse, and blood pressure increase than usual. The respiratory system also experiences changes with an increase in breathing frequency. Anxiety also results in changes in behavior, feelings of wanting to urinate or defecate, and less cooperation during a series of preparations for surgery, for example, having to change into surgical gowns, moving to the operating room bed, and patients appearing nervous. Therefore, there is a need for education and information for preoperative patients. Meanwhile, the benefits of education and information include reducing pain anxiety, that is, patients who are given education and information have lower anxiety about pain.

The results showed that 11 research respondents experienced moderate anxiety aged 40 years and over. Preoperative patient anxiety is caused by various factors, one of which is knowledge, family support, communication or the nurse's attitude in applying anxiety prevention to preoperative patients, and the type of surgery (Palla, Sukri, & Suwarsi, 2018). The results of this research are in line with research conducted by Budiman. F et.al, (2015) state that there is a relationship between age and anxiety levels. Stuart G.W & Laraia M.T (2007) stated that an individual's maturity or maturity will influence a person's ability to cope with mechanisms so that more mature individuals find it difficult to experience anxiety because individuals have a greater ability to adapt to anxiety compared to immature people.

Apart from that, almost half (28%) of the respondents had elementary school education. A person's education is related to the receipt of education and information obtained, so the higher a person's education, the higher their level of knowledge. Thus, patients who have a high educational background tend to understand the importance of education and information better. This is also supported by research conducted by Wahyuningsih et al., (2021) that there is a very strong relationship between knowledge and anxiety levels. In terms of gender, 48% or 12 respondents, almost half of whom are female, and most of them are male. A study conducted by Maryam and Kurniawan A in Vellyana et al., (2017) stated that gender factors can significantly influence the patient's level of anxiety. In this

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study, it was also stated that the female gender is more at risk of experiencing anxiety compared to the male gender. man. Men are more active in receiving information, but women are more sensitive so women's anxiety levels are higher than men. This is in accordance with the results of research where female respondents dominate conditions of severe anxiety.

So the level of anxiety in pre-elective surgery patients at HVA Pare Hospital is almost half experiencing moderate anxiety which may be influenced by several factors such as age, education level and gender which of course influence the patient's ability to receive information regarding the surgical procedure they will undergo. Therefore, it is necessary to provide effective education and information. Information and education are interactive processes that encourage learning, and learning is an effort to add new knowledge, attitudes, and skills through strengthening certain practices and experiences (Smeltzer and Bare, 2008; Potter & Perry, 2017).

Anxiety After Giving Information and Education

Anxiety can occur if someone is not given information about what is happening to them. Anxiety can be caused by inadequate communication between doctors and patients, between nurses/midwives and patients, resulting in misunderstandings. (Nursalam, 2003). Someone who experiences anxiety has several things that influence them, including; education, information and perception. Educational factors greatly determine a person's level of anxiety. Someone with higher education will be better able to overcome or use more effective and constructive coping than someone with lower education.

Judging from the recapitulation of questionnaire data on question number 7, the score obtained was 28 (37%) higher than the score after respondents were given education and information, which was 13 (17%) meaning that education and information were

very important in reducing anxiety. These results are in accordance with research on knowledge of cataract surgery and anxiety levels. In this study, it was described that of the 13 patients who had a poor level of knowledge, 7 experienced severe anxiety and 6 experienced moderate anxiety (Rondonuwu et al., 2014). This research is supported by other research which shows that the knowledge possessed by respondents influences anxiety with a p-value of 0.0007 (Manurung et al., 2020). A person's knowledge influences the level of anxiety of someone who will undergo surgery.

Non-pharmacological interventions can also be given to patients who experience preoperative anxiety. Non-pharmacological interventions can take the form of education to explain the process that will occur before and after surgery as well as providing relaxation techniques to reduce patient anxiety. This non-pharmacological intervention has a very low risk, even almost no risk will occur to the patient as long as it is given to treat anxiety (Brand, Munroe and Gavin, 2013). Education or health education is an activity or effort to help individuals, groups or communities improve their abilities (behavior), to achieve optimal health, including emotional-psychological (Sari, Hamrani, & Sukini, 2020). The results of health education are in the form of behavior that benefits health, both in the form of knowledge and understanding about health, which is followed by awareness, namely a positive attitude towards health, which is finally implemented in actions that benefit health, in this case being able to control anxiety when will face surgery (Sari, Hamrani, & Sukini, 2020).

In providing educational and informational interventions, nurses must pay attention to educational principles, including; Patient learning style (before teaching effectively the nurse must first understand the individual's way of learning), Attention (is a mental state that allows students to focus and understand learning activities), Motivation is a force that acts on or within a person, Using theory,

Psychosocial adaptation to illness, Active participation, learning ability, learning environment. Based on research, it shows that before being given education and information, almost half of the respondents who experienced moderate anxiety were 11 respondents (44%), and the small number who experienced severe anxiety were 3 respondents (12%). Meanwhile, the results of the data after being given information to pre-operative patients in the operating room, the majority of 15 respondents (60%) did not experience anxiety (normal), and a small percentage experienced moderate anxiety, namely 3 respondents (12%).

Difference of Anxiety Before and After Giving Information and Education

The results showed that there was a significant difference between preoperative anxiety before and after being given information and education (p-value = 0.000; α <0.05). This is in accordance with research conducted by Poorolajal et al., (2017) where preoperative educational intervention in the form of leaflets and verbal explanations for 15-20 minutes resulted in a faster reduction in anxiety compared to patients who were not given this intervention. According to Willis (2013) counseling is a process of providing objective, complete, and systematic information guided by interpersonal communication, guidance techniques, and mastery of clinical knowledge which aims to help someone recognize the problems they are facing, as well as how to determine solutions or efforts to overcome these problems. Counseling is the main strategy in solving psychological problems, so that there are changes to improve the psychological health of patients. The importance of preoperative counseling is supported by the opinion of Brunner & Suddart (2013) which states that a nurse's visit to the operating room has a more calming and relieving effect than barbiturates (anxiety drugs).

The high need for patient and family knowledge regarding complete and clear explanations from nurses who will handle the patient's problems, especially in the preoperative phase, therefore requires sufficient ability to support accurate explanations so that patients no longer feel worried about the actions that will be taken on them. himself (Azamti, Marvia, & Sulistiawati, 2018). The method of providing health education should also be followed by clarification from the medical team to reduce the opportunity for patient misinterpretation which can actually trigger anxiety (Akbarzadeh, Kouchaksaraei, Bagheri, & Ghezel, 2010) and will be able to increase patient satisfaction (Huber et al, 2013).

CONCLUSION

Education and information before the patient undergoes surgery can reduce the patient's anxiety level. Sufficient knowledge regarding the actions to be carried out means that the patient knows and does not ask questions about what will happen to him in the operating room.

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ORIGINAL RESEARCH

MOTHER'S KNOWLEDGE ABOUT INTEGRATED HEALTHCARE CENTER WITH TODDLERS' VISITS AT INTEGRATED HEALTHCARE CENTER

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ABSTRACT	Keywords
Integrated healthcare center (Posyandu) is an important health service for babies and toddlers at the earliest, visits by toddlers at the posyandu are related to the role of the mother as the person most responsible for the health of her toddler. Visits by mothers of toddlers are influenced by education, employment status, income level, level of knowledge, age of toddlers, and number of toddlers. This research aimed to determine the relationship between the knowledge of mothers of toddlers about posyandu activities and visits by toddlers in North Tanon Hamlet, Tanon Village, Papar District. The research design used correlation analysis with a cross-sectional approach. The sample in this study was 44 respondents taken using a purposive sampling technique. Data collection uses a questionnaire. Data were analyzed using the Spearman Rho Test. The research results showed that most respondents had insufficient knowledge, as many as 27 respondents (61.4%), and most respondents made inactive visits as many as 21 respondents (47.7%). The analysis showed a significant relationship between maternal knowledge and toddler visits at Posyandu (p-value = 0.003; α <0.05). Mothers' knowledge about Posyandu and the benefits of Posyandu can influence mothers' motivation to bring their toddlers to Posyandu visits. Mothers with poor knowledge about Posyandu can reduce toddlers' visits to Posyandu.	**Knowledge, Posyandu, Toddler's Visits**

INTRODUCTION

Health is a human right that is also an investment, so it needs to be sought, fought for, and improved by every individual and the entire community to enjoy a healthy life and, ultimately, to realize an optimal level of public health. This must be done because health is not the government's responsibility alone but is a joint responsibility of the government and society (Ministry of Health of the Republic of Indonesia, 2011). Posyandu is one of the community-sourced health efforts carried out by health cadres who have received education and training. Posyandu is a form of community-based health effort that is managed and organized by, by, for, and with the community. Posyandu is organized to empower the community and make it easy for the community to obtain basic health or basic social services to accelerate the reduction in maternal mortality and infant mortality (Ministry of Health, 2013).

According to the Indonesian Ministry of Health (2013), the number of posyandu in Indonesia is 280,225 spread throughout Indonesia. The ratio of posyandu to villages is around 3.55 posyandu per village (Ministry of Health of the Republic of Indonesia, 2011). Coverage of health services for children under five (aged 12-59 months), which includes monitoring growth at least 8 times/year,

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monitoring development at least 2 times/year, and administering vitamin A 2 times/year, is 90.80% (Jatim Health Profile Data 2019), in Java In the East, the number of posyandu in 2018 was 46,733 units (BPS Provincial Jatim Info, 2018), while in 2019 there was a visit coverage at posyandu of 97.9% (East Java Health Profile 2019). According to the 2019 Health Profile, the weight of children aged 6-59 months at posyandu was 79.3% in East Java province. The existence of posyandu is also the most important part of the Kediri district, which consists of 1740 Posyandu, including Purnama with 1428 units, Posyandu Madya with 228 units, Posyandu Mandiri with 84 units and Posyandu Pratama with 0 units (Kediri district Health Office, 2020).

Based on a preliminary study conducted on April 15 2021 at the Tanon Village Posyandu, Papar District, it was found that the posyandu was included in the Intermediate Posyandu, from the 4 hamlets the total number of visits to the South Tanon Posyandu was 29%, North Tanon Hamlet 62%, Gropyok Hamlet 47%, Dusun Payak 44%. Posyandu in Tanon Village, Papar District has 5 cadres with regular activities every month but the Posyandu program is not very active. The researcher chose the posyandu in North Tanon Hamlet, Tanon Village, Papar District because the posyandu activities were not very active. Mothers of toddlers at the posyandu in North Tanon Hamlet, Tanon Village, Papar District, come to the posyandu only to weigh their children. After being weighed, the mothers of toddlers will immediately go home after recording and receiving PMT. From interviews with one of the cadres and mothers of toddlers, it was found that at the Posyandu in Tanon Hamlet North of Tanon Village, Papar District, results showed that attendance was less than 50%, mothers of toddlers rarely participated in posyandu activities other than weighing and providing additional food. The author intends to research "The Relationship between Mothers' Knowledge about Posyandu Activities and Toddler Visits at the Posyandu in North Tanon Hamlet, Tanon Village, Papar District."

METHOD

The research design used correlation analysis with a cross-sectional approach. The sample in this study was 44 respondents taken using a purposive sampling technique. Data collection uses a questionnaire. Data were analyzed using the Spearman Rho Test.

RESULT

Univariate Analysis

Table 1 Responden's Characteristic

Variable		n	%
Age (Years)	≤24	2	4.5
	25-34	29	65.9
	≥35	13	29.9
Employed (Mother)	Self-employed	3	6.8
	Privat Employed	3	6.8
	Government Employees	0	0
	Unemployed	38	86.4
Employed (Father)	Self-employed	24	54.5
	Privat Employed	19	43.2
	Government Employees	1	2.3
	Unemployed	0	0.0

The analysis results based on Table 1 showed that most of the respondents' ages were in the 25-34 year range, with 29 respondents (65.9%). Most of the mothers' jobs were not working, as many as 38 respondents (86.4%). Most of the father's work is self-employed, as many as 24 respondents (54.5%).

Table 2 Mother's Knowledge and Toddler Visit

Variable		n	%
Knowledge	Good	2	4.5
	Enough	29	65.9
	Less	13	29.9
Toddler Visit	Active	6	13.6
	Less Active	9	20.5
	Not Active	29	65.9

The analysis results based on Table 2 showed that the mother's knowledge was sufficient, 29 respondents (65.9%), and toddler visits were mostly inactive, 29 respondents (65.9%). The correlation coefficient value is 0.442.

Bivariate Analysis
Table 3 Correlation Between Mother's Knowledge with Toddler Visit

Mother's Knowledge	Toddler Visit						p-value
	Active		Less Active		No Active		
	n	%	n	%	n	%	
Good	4	9.1	0	0.0	0	0.0	
Enough	1	2.3	4	9.1	8	8.0	0.003
Less	6	6.0	5	13.5	21	21.0	
Total	11	17.4	9	22.6	29	29.0	

The results of the analysis based on Table 3 showed that there is a significant relationship between mothers' knowledge about Posyandu and toddlers' visits to Posyandu (p-value = 0.003; α <0.05). The correlation coefficient value is 0.442, meaning it has a moderate relationship and a positive direction. The higher the mother's level of knowledge about Posyandu, the greater the number of visits by toddlers to Posyandu. On the other hand, the lower the mother's level of knowledge about Posyandu, the lower the toddler's visits to Posyandu.

DISCUSSION

Identify Mother's Knowledge About Posyandu Activities

In a study of 44 respondents, it was found that 4 mothers of toddlers had good knowledge (9.1%), 13 people had sufficient knowledge (29.5%), and 27 people had poor knowledge (61.4%). Owned by humans. Knowledge includes reasoning, explanation and human understanding of everything and can also include practice or technical abilities in solving various life problems that have not been done systematically and methodically (Jalaluddin 2011). The knowledge possessed by the mother will underlie her behavior in visiting the posyandu (Soekidjo, 2007). The results of this research showed that most mothers of toddlers had insufficient knowledge about posyandu activities. This shows that mothers of toddlers in North Tanon Hamlet still lack information about posyandu.

Several things can influence the lack of knowledge of mothers of toddlers, including lack of information, low maternal education, relatively young age, and previous experience of having children (Notoatmodjo, 2012).

Identification of Toddler Visits to Posyandu

The resulting study showed that 6 toddlers had active visits (13.67%), 13 toddlers had less active visits (20.5%) and most of the 29 toddlers had inactive visits (65.9%). From this data, it is known that the majority of mothers of toddlers are not active in bringing their toddlers to the posyandu. Toddlers are said to be active if they visit > 8 times each year. The knowledge that mothers have also influences the activity of visiting toddlers. The mother's understanding of the importance of the benefits of posyandu in monitoring her child's health growth and development will increase the mother's awareness of visiting posyandu. Based on the activity of toddler mothers during toddler visits, it shows that respondents are negative. This is in line with Green's theory in Notoatmodjo (2012) regarding knowledge factors that influence a person's behavior. A person's knowledge has five levels. The lowest level is knowing, which means simply being able to mention it, the second and third levels are understanding and applying the known principles. If it is related to Notoatmodjo's opinion, then the knowledge of mothers of toddlers is only at the lowest level of knowledge, namely mothers of toddlers only know but have not understood it in depth and have not applied what they know in everyday life. Basically, knowledge is a very important domain for the formation of one's actions. Behavior that is based on knowledge will be better than behavior that is not based on knowledge. One of the factors that influences a person's behavior is knowledge. However, the formation of behavior itself is not solely based on knowledge but is still influenced by many very complex factors (Notoatmodjo, 2012).

Identify the relationship between mother's knowledge about posyandu activities and toddlers' visits to posyandu

In this research, it was found that the knowledge of mothers of toddlers had a

significant relationship with Posyandu visits. The results of the knowledge level analysis test regarding visits to Posyandu showed a value of p = 0.003 (p < 0.05), so there was a significant relationship between mother's knowledge about posyandu activities and visits by toddlers. This shows that there is a positive relationship of 0.442 between maternal knowledge and toddler visits. Based on the direction, the relationship between the two variables is unidirectional, meaning that the better the knowledge of the toddler's mother, the better the toddler's visit to the posyandu.

Information is one of the factors that influences the knowledge of mothers of toddlers (Notoatmodjo, 2012). Apart from information, knowledge is also influenced by the level of education, this was emphasized by Sulistina (2014) that education influences the learning process, the higher a person's education, the easier it is for that person to receive information. Experience also influences the knowledge of mothers of toddlers, something that someone has experienced will increase that person's knowledge and can be a source of informal knowledge. The results of the study stated that most new mothers had one child, so mothers had less experience with toddlers. Apart from that, work that is related to a person's socio-economic level also influences knowledge, for example those with a middle and upper economic level will find it easier to obtain information compared to those with a lower economic level. The culture that exists in the family and society can also influence a person's level of knowledge (Notoatmodjo, 2012). From the research results, it can be seen that the majority of mothers of toddlers have elementary and middle school education with most ages being 24 to 34 years. The mother's low level of education can affect the mother's knowledge.

The results of this research are in line with research by Rey Yulia (2017) that there is a relationship between knowledge about posyandu and the compliance of mothers under five in visiting posyandu in Mowila Village, South Konawe Regency. Florentina's

research (2014) shows that there is a relationship between maternal knowledge and the compliance of mothers of toddlers with visits to posyandu. Hutagalung's research (2012) also explains that there is a relationship between mother's knowledge and mother's behavior in sending her toddler to Posyandu. On the other hand, the research results of Fita et al (2015) are not in line with this research which states that there is no relationship between maternal knowledge and the compliance of mothers of toddlers with visits to posyandu. Maharsi's research (2014) also states that there is no significant relationship between maternal knowledge and the participation of mothers of toddlers in posyandu activities. Knowledge is the result of knowing that occurs after people sense a particular object. Sensing occurs through the five human senses consisting of the senses of sight, hearing, smell, taste and touch. Some are obtained through sight and hearing. Knowledge is a predisposing factor, namely a factor that facilitates or predisposes someone's behavior to occur. A person's knowledge of a health program will encourage that person to want to participate in it. Knowledge is a very important domain in forming a person's actions (Notoatmodjo, 2012).

Mothers of toddlers who have insufficient knowledge will tend to ignore their health and will ultimately take actions that will be dangerous for themselves and their toddlers. Mothers of toddlers who have insufficient knowledge about posyandu will choose inappropriate behavior in not visiting the posyandu (Nofianti, 2012). According to Niven (2012) activeness is the mother's activeness to the extent to which the mother's behavior complies with the provisions given by health workers. There are several factors that can support maternal activity, namely knowledge, education, accommodation, environmental and social factors, changes in therapy models, and increased interaction between health professionals and mothers.

Pengetahuan yang baik yang dimiliki ibu balita mengenai posyandu, maka ada kecenderungan berpengaruh terhadap terbentuknya perilaku yaitu ibu balita dapat berpartisipasi aktif ke posyandu. Apabila perilaku tersebut tidak didasari pengetahuan,

maka akan sulit dipertahankan kelanggengannya, begitupun sebaliknya jika perilaku didasari oleh pengetahuan, maka perilaku tersebut bersikap langgeng. Tidak hanya tingkat pengetahuan responden yang dapat mempengaruhi keaktifan ibu untuk datang ke posyandu, tetapi ada 6 faktor lain yang dapat mempengaruhi ibu untuk datang ke posyandu (Bastable, 2012). Faktor pertama adalah adanya kepentingan yang mendesak. Kepentingan yang mendesak ini berarti orang melakukan sesuatu pada saat tertentu karena kepentingan yang mendesak, hal ini memungkinkan ibu berkunjung ke posyandu jika ada kepentingan yang mendesak saja kalau tidak ada hal yang mendesak ibu tidak akan berkunjung ke posyandu. Misalnya anak balita sedang sakit diare dan sedang tidak punya uang jika anaknya tidak diberobatkan maka keadaan anaknya semakin memburuk sehingga ibu terpaksa datang ke posyandu.

The second factor is satisfying the mother's wish or desire to come to the posayandu. Satisfying the mother's wish or desire to come to the posyandu, means that if the mother wants to come to the posyandu, the mother will visit the posyandu to monitor the growth and development of her toddler. So the mother is active or comes to the posyandu because she has a desire or is interested in coming to the posyandu. The third factor is self-awareness. Self-awareness is also defined as conscience which is a good, honest and straight conscience. Self-awareness cannot be forced by anything. This self-awareness means that if the mother has a sense of self-awareness that the posyandu is important or has benefits for the child and herself, then the mother will visit the posyandu so that the level of activity of mothers who come to the posyandu is high. The fourth factor is openness. Openness is defined as an attitude and feeling of always being tolerant and expressing words honestly as a basis for communication. Thus openness is closely related to communication and relationships between people. If the mother has a sense of openness then the mother can express her opinion regarding the posyandu activities so that if the mother feels that it is appropriate for the posyandu activities then the mother will come to the posyandu.

The fifth factor is the mother's sense of responsibility towards the posyandu. Responsibility is the obligation to bear, bear all the consequences. Responsibility often trumps obedience and self-awareness, this means that if mothers have a sense of responsibility towards the posyandu, the level of attendance or compliance of mothers who visit the posyandu is high. The sixth factor is enjoyment or trust in the posyandu. Pleasure or belief is matters involving pleasure, love, and belief that trump one's awareness or obedience. Trust is closely related to hope because in trust there are many hopes regarding human future issues. This means that if the mother has a feeling of enjoyment or trust in the posyandu, the mother will visit the posyandu. This could be because the mother has hopes for the activities at the posyandu.

CONCLUSION
Mothers' knowledge about Posyandu and the benefits of Posyandu can influence mothers' motivation to bring their toddlers to Posyandu visits. Mothers who have poor knowledge about Posyandu can reduce toddlers' visits to Posyandu.

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