Correlation between Parity and Maternal Attitudes with the Contraception of Post-Child Birth use in the Mranggen Health Center

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Abstract

Background: Birth control given to the recipient for 42 days after delivery is known as post-partum birth control. Data from BKKBN shows that 42% of pregnancies occur between 12 and 25 months of gestation, and if pregnancy occurs too soon after delivery, postnatal birth control reduces AKI. In the Demak district in 2021, as many as 252,125 people participated in active family planning programs (84.1%). Meanwhile, there will be an increase in the number of women of childbearing age in 2022, namely 253,663 people. Still, those who actively participate in family planning have not increased by a percentage of 80.9%. Objective: research to determine the characteristics and relationship between parity and maternal attitudes with the use of postpartum family planning in the working area of the Mranggen Health Center. Method used is descriptive and cross-sectional. The sample consisted of 60 people using proportional random sampling. Results analysis shows that the highest age group is 48 people (80.0%) with an age range of 20-30 years, the mother's education is (48.3%) and the highest data is for mothers with a Bachelor's degree, amounting to 29 people. Maternal employment was found to be the highest percentage of 33 mothers who did not work (55.0%), while the parity of mothers with a high percentage of primiparas (53.3%) was 32 people compared to multiparas. The results of bivariate analysis on the variables age p-value 0.027 (<0.05), education p-value 0.000 (<0.05), parity p-value 0.007 (<0.05), attitude p- value 0.003 (<0, 05) is related to the use of postpartum birth control and work p-value 0.653 (>0.05) there is no relationship with postpartum birth control. Conclusion, there is a relationship between age, education, parity, and the mother's attitude towards the use of postpartum contraception. Meanwhile, employment has no relationship with postpartum birth control use.

Keywords

parity, attitude, contraception, postpartum

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Introduction

The Postpartum family planning is the utilization or use of contraceptives directly after giving birth until 6 weeks or 42 days after giving birth. The principle of selecting the contraceptive method used does not interfere with breast milk production and is appropriate to the mother's condition. The importance of spacing and preventing pregnancies so that they are not too close at least 2 years after giving birth regulate the number of children so that mothers do not give birth too often, preferably no more than 3 times, prevent unwanted pregnancies, maintain and improve the health of mothers, babies, and toddlers, mothers have enough time and attention for themselves, children and families (BKKBN, 2023).

Family planning services in Indonesia also support the acceleration of reducing maternal mortality (AKI) by preventing multiple pregnancies (too young, too old, too many, and too frequent) and unwanted pregnancies, delaying gestational age, and regulating the distance between pregnancies. This unwanted pregnancy (KTD) can occur in couples. The application of postpartum contraception is very important because the return of fertility to a mother after giving birth is unpredictable and can occur before the menstrual cycle arrives, even in breastfeeding women. The first ovulation in non-breastfeeding women can occur as early as 34 days after delivery, or can even occur earlier. This can cause women to experience unwanted pregnancies (KTD/unwanted pregnancy) at close intervals to previous pregnancies. Contraception should be used before sexual activity begins. Therefore, a woman should start contraception as early as possible after giving birth (Ruhanah, 2023)

Based on data from the Mranggen Demak Community Health Center, the number of postpartum mothers in 2023, the number of PUS will be 14,387 people and the population using active family planning will be 9,861 people. Then in the same year, namely 2023, as many as 554 mothers used birth control after giving birth. In 2021, there will be 11719 PUS using KB pills, 117886 KB injections, 15718 KB implants, and 5993 IUD KBs. This research aims to determine the characteristics of mothers (age, education, occupation and parity) with the use of postpartum contraceptives, and determine the relationship between parity. and the mother's attitude towards the use of postpartum contraception in the working area of the Mranggen health center.

Method

This research uses a descriptive method with a cross-sectional approach, which involves collecting data simultaneously to ascertain how risk and effect variables are connected. With a sample of 60 people with calculations using the Slovin formula.

Result and Discussion

Univariate results

Table 1. Frequency distribution based on characteristics

Age	Frequency	Persentase %
20-30	48	80.0%
31-45	12	20.0%
Education		
Junior high school	1	1.7%
Senior High School	26	43.3%
Bachelor degree	29	48.3%
Master degree	1	1.7%
Diploma	3	5.0%
Parity		
Primipara	32	53.3%
Multipara	28	46.7%
Work		
Doesn't work	33	55.0%
Work	27	45.0%

The age distribution of the 60 respondents can be seen in Table 1, with the highest age group numbering 48 people (80.0%)

falling in the 20-30 year age range. Thus, this age is considered a healthy age for the reproductive system to get pregnant and start using family planning. The age range of 20-30 years is a healthy and good (riskfree) age range for family planning, pregnancy, and childbirth, according to research (Sitorus & Siahaan, 2018). Mother's education level was classified into six categories based on the results of the questionnaire: elementary school, middle school, high school, diploma, bachelor's degree, and master's degree. The table above shows the results of research on 60 mothers with the highest level of education, 29 (48.3%) had a bachelor's degree. Therefore, the level of education in this study can be said to be very good. It is the individual's level of education that makes the decision about which contraceptive to use. Whether in formal or informal settings, education is a lifelong endeavor aimed at building character and talent. Education influences the attitudes, actions of a person or group.

Parity results based on Table 1 show that 32 mothers out of 60 respondents (53.3%) have one child (primipara). From this research it can be said that mothers with one child (primiparous women) are more likely than mothers with two to four children (multiparous women). A woman's use of contraception is influenced by the number of children she gives birth to. Choosing to have several children has a significant impact on the values that each parent holds dear as their preferred standard. A woman's experience and information regarding the number of children she has can also be used to help her choose the right contraceptive technique and device. Equality and the number of children who survive are also closely related to high levels of welfare. In general, the quality of children is more important than the number of children. Children from poor families are now considered economically valuable. In general, poor families have more children than families with middle to upper economic levels (Aningsih & Irawan, 2019).

Based on Table 1 above, results were obtained from 60 respondents, the majority of whom were working mothers, 33 people (55.0%). Helps expand a person's knowledge and gives a person more information that helps decide on the use of effective and efficient contraceptive methods (Aningsih & Irawan, 2019). A person's job is a determinant of their quality. Work causes a disconnect between health practices and knowledge, which in part makes individuals reluctant to learn about health problems and take preventive measures. Job demands encourage a willingness to handle childbirth by considering the burden of child dependency (dependency ratio). Family planning users have high incomes and believe that being a family planning user means building a happy small family (Deviana, 2023).

Based on Table 1, the results show that 45 (75.0%) mothers used postpartum contraception. So it can be said from the table above that at the Mranggen Demak Community Health Center more people use postpartum contraception compared to those who don't. Family planning is an attempt to control the number of children born, as well as the exact ages and spacing between them. Family planning also aims to control pregnancy and offers unlimited support, security and understanding to foster a happy and healthy family. Limiting the number and location of births is one of the goals of family planning initiatives. One type of birth control needed is postpartum birth control. Postpartum family planning uses preventive methods during the postpartum period for forty-two days after delivery as a step to avoid losing the opportunity to organize their family. Careful planning for postnatal care is needed to avoid pregnancy that is too early or too short after giving birth. This is due to the fact that closely spaced pregnancies increase the likelihood of maternal disease and unfavorable pregnancy outcomes, such as low birth weight babies, low birth weight babies, and premature birth (Niam, 2022).

Bivariate analysis

Using bivariate analysis and chi-square statistical tests, this study looked at the relationship between age, education, employment, parity, and maternal attitudes and the use of postpartum family planning at the Mranggen Demak Community Health Center.

From the Table 2, it shows that 33 (68.8%) mothers aged 20-30 used post-partum contraceptives and 15 (31.3%) did not use post-partum contraceptives. The relationship between age and postpartum birth control use is shown by a p-value of 0.027 obtained from the results of the Chi-Square statistical test. This shows that the hypothesis is not rejected because the p value is less than 0.05. These results are consistent with research (Manik, 2019) which shows that age is related to the use of postpartum or postpartum contraception.

From the Table 3, mothers with a bachelor's degree make up the largest percentage, 28 people (96.6%) use post-partum contraceptives and 1 (3.4%) do not use post-partum contraceptives. A p-value of 0.000 was obtained using the chi-square statistical test in Table 1.3. This shows that the p-value < (0.05), rejects the null hypothesis and shows that there is a correlation/relationship between postnatal contraceptive use and education. Research (Indriyani, 2021) which found a p-value of 0.008 for the correlation between education and contraceptive use is supported by the findings of this study. The findings of this study are in line with research conducted in the city of Axum in northern Ethiopia (Mansori, 2017) that education is related to the use of contraceptive techniques. There are several possible reasons for this. For example, postpartum women tend to have deeper understanding as their level of education increases.

Based on the Table 4, the results show that working mothers make up the largest percentage, 26 (78.8%) using postpartum contraceptives and those who do not use 7 (21.2%). The p-value is 0.653 based on the chi-square statistical test, the null hypothesis is accepted and the p-value is > 0.05. This shows that postpartum contraceptive use and employment are not related. The results of this study are in line with research (Damayanti, 2021) which states that the results of data analysis show that there is no relationship between maternal employment and the choice of contraceptive method. This research is also in line with (Pratiwi, 2016) showing that there is no relationship between employment and family planning acceptor.

Table 2. Relationships between maternal age and postpartum birth control use

	Positif		Negatif				
Age	n	%	N	%	N	%	p-value
20-30	33	68.4%	15	31.3%	48	100.0%	
31-45	12	100.0%	0	0.0%	12	100.0%	0.027
Total	45	75.0%	15	25.0%	60	100.0%	

Table 3. Relationships between maternal education and postpartum birth control use

	Positif		Negatif				
Education	N	%	n	%	n	%	p-value
Junior High School	1	100.0%	0	0.0%	1	100.0%	
Senior High School	12	46.2%	14	53.8%	26	100.0%	
Bachelor Degree	28	96.6%	1	3.4%	29	100.0%	0.000
Master Degree	1	100.0%	0	0.0%	1	100.0%	
Diploma	3	100.0%	0	0.0%	3	100.0%	
Total	45	75.0%	15	25.0%	60	100.0%	

Table 4. Relationships between employment and postpartum birth control use

	Positif		Negatif				
Work	N	%	n	%	n	%	p-value
Work	26	78.8%	7	21.2.%	33	100.0%	
Doesn't work	19	70.4%	8	29.6%	27	100.0%	0.653
Total	45	75.0%	15	25.0%	60	100.0%	

Table 5. Relationships between Parity and Postpartum Birth Control Use

	Positif		Negatif				
Parity	n	%	n	%	N	%	p-value
Primipara	19	59.4%	13	40.6%	32	100.0%	
Multipara	26	92.9%	2	7.1%	28	100.0%	0.007
Total	45	75.0%	15	25.0%	60	100.0%	

Table 6. Relationships between attitudes and the use of postpartum contraception

	Use		do not use				
Attitude	n	%	n	%	n	%	p-value
Positif	36	87.8%	5	12.2%	41	100.0%	
Negatif	29	47.4%	10	52.6%	19	100.0%	0.003
Total	45	75.0%	15	25.0%	60	100.0%	

Based on the table 5, the parity of multiparous mothers is the largest percentage, namely 26 mothers (92.9%) who use postpartum contraception and those who do not use 2 (7.1%). The results of the chi-square statistical test in Table 1.5 show a p-value of 0.007, meaning the p-value < (0.05). Therefore, the null hypothesis is rejected, because many people think that using contraception now may have an impact on fertility later. This is in line with research (Gustirini, 2020), there is a relationship between parity and contraceptive use. The maternal mortality rate is greater for first births and high births (three or more). According to research (Dakmawati, 2020) shows that first births and high births (three or more) have increased the incidence of maternal death. While family planning can help reduce the risk of parity 1, obstetric care can also help reduce it. Parity and intention to use contraception have long been associated. The use of contraception can be used to delay and space the mother's pregnancy until she has a certain number of children.

Based on the 6, the results show that 36 (87.8%) mothers who used postpartum contraception had a positive attitude, and 5 (12.2%) who did not use contraceptives. There were 9 mothers with a non- positive attitude who used postpartum contraception (47.4%) and 10 (52.6%) who did not use birth control. The findings of this research are in line with research (Nesimnahan et al., 2022) in the Fatumonas Health Center working area showing that attitudes are related to contraceptive use in women of childbearing age. The results of this study are consistent with previous research which shows a relationship between attitudes and postnatal contraceptive use (Ruwayda, 2014), according to this research, individuals who have a pessimistic view are more likely to decide not to use contraception after becoming pregnant. The study concluded that because respondents were fairly knowledgeable about birth control and contraceptive techniques, there was a strong relationship between views and postpartum contraceptive methods. Study participants were well informed

about birth control, contraception and had favorable views about their use. Compared with respondents who have negative attitudes, this indicates that respondents are more likely to accept and understand the use of postnatal contraception.

Conclusion

This study obtained the characteristics of mothers aged 20-30 with the highest frequency being 48 people (80.0%). The majority of mothers' education was undergraduate education with 29 people (48.3%). The highest number of parity obtained by primiparous mothers was 32 people (53.3%) and multiparas had the lowest percentage, namely 28 people (46.7%), while the highest percentage of non-working mothers was found at 33 people (55.0%).

Characteristics of the mother's relationship with the use of post-natal contraceptives, namely that there is a relationship between age and education with the use of post-natal contraceptives, while employment is not related to the use of post-natal contraceptives (p-value 0.653).

The relationship between maternal parity and the use of postpartum contraception based on the parity of 19 (59.4%) primiparous mothers using postpartum contraception and 13 (40.6%) who did not use it, then 26 (92.9%) multiparous mothers used postpartum contraception. and those who did not use 2 (7.1%).

The relationship between maternal attitudes and the use of birth control can be concluded that 36 (87.8%) mothers who used postpartum birth control had a positive attitude and 5 (12.2%) who did not use birth control. There were 9 mothers with a non- positive attitude who used postpartum contraception (47.4%) and 10 (52.6%) who did not use birth control.This era is an era where there is widespread exchange of resources, technological innovation and information without national borders. Medical apps make smartphones a useful tool in the practice of evidence-based medicine at the point of care, and can also play an important role in patient education, disease self-management, and remote patient monitoring.

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Description of The Implementation of The Domestic Violence Control Program During The Covid-19 Pandemic by Midwife

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Abstract

The COVID-19 pandemic is a multidimensional problem. Proofed by the increasing number of domestic violence (DV). DV has many negative impacts, such as reproductive disorders. So, an effort needs to be done to control the cases. Such as, involving midwives to carry out promotional and preventive activities. However, with changes in the health care system as a form of adaptation and there are no reports on the program. Those conditions became the reason to conduct research aimed at doing an overview of the DV control program during COVID-19 pandemic by midwives. This research is quantitative with descriptive method. The sample in this study was determined by a total sampling technique, namely all midwives who practiced during the COVID-19 pandemic era at the Lakarsantri District Health Center, Surabaya. The instruments used in the questionnaire are mixed types. The collected data will be processed and analyzed by descriptive analysis. The results obtained were 71.4% of 14 midwives were aware of the workplace policies for controlling DV and 50% stated that there was training. The implementation of DV education has been carried out by 92.9% of midwives and early detection has been carried out by 42.9% of midwives. Also, 14.3% said there were obstacles. The conclusion of this study is that efforts to control domestic violence during the COVID-19 pandemic by midwives have been carried out. However, the role of midwives and the form of services that have been adapted to the new normal still need to be improved.

Keywords

COVID-19 pandemic; domestic violence; midwife

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Introduction

The COVID-19 pandemic is a phenomenon that causes a domino effect. This is evidenced by the increasing number of cases of domestic violence (KDRT) during this situation (Adrian et al., 2022). The definition of domestic violence according to WHO (2012) is violence that is carried out physically, sexually, emotionally, or forcibly controlled behavior by a partner. This condition is a public health problem that often goes unnoticed.

The increase in the number of domestic violence cases was first reported in a study conducted in Hubei Province, China. It was recorded that in February 2020, there had been a threefold increase in cases compared to the previous year, which was 162 cases (Graham et al., 2020). The same report was also found in Indonesia. Based on data collected by LBH Apik (Indonesian Women's Association for Justice) it has been recorded that during March to mid-April 2020 97 cases of domestic violence occurred. This figure shows an increase of 68% from the previous year. Other supporting data were issued by Komnas Perempuan, with the figure reaching 213 cases.

The increase in the number of domestic violence cases during the COVID-19 pandemic did not only occur at the international level, but also at the national level. At the provincial and city levels, the same phenomenon was also found. In East Java in 2020, there were 401 cases of violence recorded and 66.52% of them were domestic violence (Komnas Perempuan, 2021). The city that became the largest to cases of domestic violence that occurred in East Java was Surabaya, with a total of 80 cases reported (Sutinah & Kinuthia, 2019). These data can show that the COVID-19 pandemic has a significant relationship with an increase in the number of domestic violence cases (KPCPEN, 2020).

The increase in the number of domestic violence cases during the COVID-19 pandemic was caused by various factors. One of them is the implementation of social distancing (Radhitya et al., 2020). Although the aim of this movement is to minimize human contact. Thus, the movement of the virus can be reduced and transmission of the virus can be avoided. In fact, activity restrictions can trigger conditions of stress, lack of security, increasing economic difficulties, and hindering access to public services (WHO, 2021). The above conditions are risk factors for domestic violence.

The impact of domestic violence is multidimensional. In addition to the effects related to emotional states, such as feeling afraid, losing self-confidence, and can progress to depression. Another impact, can be in the form of interference with reproductive health. A person who experiences domestic violence has a 1.5 times greater risk of developing sexually transmitted infections (STIs) and unwanted pregnancies. Also, pregnant women who experience domestic violence have a risk for miscarriage, premature delivery, fetal distress, and IUFD (WHO, 2012).

The effects of domestic violence are not only felt by mothers. This condition can also have an impact on the fetus it contains. Conditions that can occur are low birth weight (LBW), not getting immunizations, and the fetus can also experience death (WHO, 2013b). Therefore, control efforts need to be made to reduce the number of cases of domestic violence. Based on the guidelines for Control of Domestic Violence published by P2PTM (2012) Midwives as health workers at the public health facilities level can carry out promotional and preventive activities. Promotional activities by empowering the community through socialization about domestic violence, negative impacts, prevention that can be done. Meanwhile, in preventive efforts, midwives can carry out screening and monitoring with surveys. In addition, based on Minister of Health Decree No. 320 of 2020 states that midwives have the authority to provide care for victims of physical and sexual violence.

However, with the change in the form of midwifery services during the COVID-19 pandemic (Townsend et al., 2021). Such as

avoiding the provision of services by face-to-face and seeking services through online. And, various phenomena found at the end of 2020, such as the results of the accumulation of the number of domestic violence cases which showed a decrease of up to 31.5% which was inversely proportional to the number of cases found at the beginning of the year . In addition, health workers are in the bottom three positions in providing domestic violence services and there are no reports of domestic violence control programs during the COVID-19 pandemic by midwives, especially in the Pusksesmas area of Lakarsantri District (Komnas Perempuan, 2021).

The above explanation became the basis for the author to conduct research on the domestic violence control program in the era of the COVID-19 pandemic by midwives at the Lakarsantri District Health Center Surabaya to get an idea of adaptation efforts in providing services and look for gaps or problems that occur during these activities. Thus, the results of the research are expected to be a source of consideration in finding appropriate ways or approaches to improve.

Method

This research is quantitative using descriptive method. The study was conducted from May-June 2021. The respondents in this study were all midwives who practiced at the Lakarsantri Sub-district Health Center in Surabaya during the COVID-19 pandemic. There are 15 midwives. The sampling technique used was total sampling technique.

The implementation of the study only assessed one variable, regarding the domestic violence control program (KDRT) in the COVID-19 pandemic era using a questionnaire with open and closed questions. The questionnaire contained questions regarding control policies, educational activities, early detection, and obstacles in controlling domestic violence. Compilation Each question item is quoted from the questionnaire used in the assessment of indicators of success

in controlling domestic violence published by P2PTM (2012) and research published by (O'Reilly & Peters, 2018). The questionnaire was written via the Zoho form and the link was shared via WhatsApp.The collected data will be processed through the process of editing, coding, and tabulating data using the Statistical Package for Social Science (SPSS) program. Followed by data analysis using descriptive statistics. Then, the data will be presented in percent form in the table.

Results and Discussion

This research was successfully conducted on 14 midwives. The number of respondents decreased by one, due to the condition of one of the Midwives who was infected with SARS-CoV-2. So, it is constrained to fill out the questionnaire. The research location is in the Lakarsantri District Health Center, Surabaya City. The health centers included in the area are Lidah Kulon Health Center, Jeruk Health Center, and Bangkingan Health Center.

According to Table 1 which contains general characteristics, namely the respondent's age and last education. It can be seen that most of the midwives are in the age range of 30-39 years (9;61%), followed by 20-29 years as much as 22% (3) and two others are in the age range of 40 -49 years (7%). Also, 50-59 years (7%). On the characteristics of the last education, of the 14 Midwives 12 (86%) of them are graduates of Diploma III Midwifery, then Diploma IV and Bachelor of Midwifery who have gone through a professional program, each one is a Midwife (7%) .According to Table 2 which contains data on the specific characteristics of the respondents, namely knowledge of control program policies, implementation of education and early detection. Also, the obstacles experienced in the domestic violence control program.

Workplace Policies
Midwives' knowledge of domestic vi-

olence control program policies during the COVID-19 pandemic by midwives at the Puskesmas was mostly as much as 71.4% stated that there were SOPs for controlling domestic violence and 50% of midwives said that there was domestic violence control training for health workers, namely nurses (71.4%) and Midwives (28.6%).

Domestic Violence Education

Domestic violence educational activities carried out by midwives during the COVID-19 pandemic were carried out by most of the midwives (n=13;92.9%). Educational media during the COVID-19 pandemic was conducted face-to-face (n=9;69.2%) and online (n=4;30.8%). The targets of this activity are pregnant women (n=3;23.1%), post-partum women (n=1;7.7%), prospective brides (n=9;68.2%) and there are no Cadres who receive education about domestic violence.

Early Detection of Domestic Violence

Six (42.9%) of the 14 midwives who worked at the Lakarsantri Sub-district Health Center in Surabaya had carried out early detection of domestic violence. This activity was carried out through face-to-face media (n=4;66.7%) and using interview techniques (n=5;83.3%). Also, filling out the questionnaire was only applied by one midwife (16.7%). The targets of this activity are mothers who receive services at the MCH poly, namely pregnant women (n=3;50%) and prospective brides (n=3;50%).

Problem

In the implementation of domestic violence control during the COVID-19 pandemic, midwives still felt obstacles (14.3%). The perceived obstacles were the client's openness and dishonesty towards the midwife (n=1;50%) and the limitation of services during the COVID-19 pandemic (n=2;100%).

After going through the data processing and analysis process, it can be concluded that the domestic violence control program during the COVID-19 pandemic by the Midwife at the Lakarsantri District Health Center Surabaya has been implemented well (67.4%).

The role of Midwives in providing care to clients who experience physical and sexual violence in accordance with Minister of Health Decree No. 320 of 2020 and Guidelines for Control of Domestic Violence published by P2PTM (2012), Midwives have the authority to provide care as health workers who work in Puskesmas.Regarding the knowledge of midwives about SOPs for domestic violence control policies in the workplace, it was also found in a study conducted by O'Reilly and Peters (2018), only a small proportion (35%) of health workers were not aware of the existence of workplaces policy in their workplace

Meanwhile, a different number was seen in midwives who were aware of the training on domestic violence control. This condition is related to the target of training which is mostly carried out on nurses and the form of training that is more self-taught (O'Reilly & Peters, 2018)

However, only most of the midwives have received training in controlling domestic violence. But the implementation of education is still being carried out. Face-to-face domestic violence control education is still mostly done by midwives (69.2%). However, some midwives (30.8%) have conducted education through online media (Whatsapp).

This was related to the condition of the Lakarsantri sub-district, Surabaya, which at that time was included in the red zone. According to the Guidelines for Antenatal, Childbirth, Postpartum, and Newborn Services in the Era of New Habits Adaptation issued by the Indonesian Ministry of Health (2020), its implementation must be postponed during the COVID-19 pandemic or carried out through online communication media (Windatania et al., 2020).

The target for domestic violence education is mostly for prospective brides (68.2%). This activity is included in the pre-conception care recommendations in the WHO guidelines (2013a) and the Indonesian Ministry of Health (2018). Educational mate-

rials provided on the meaning and forms of violence included in domestic violence, signs and solutions for domestic violence. The solution for domestic violence is to go to health services or health workers if you experience physical and psychological injuries due to domestic violence, and health workers will help to make referrals to related parties.

Apart from that, pregnant women and post-partum mothers are also targets for domestic violence education. This activity needs to be done because according to research conducted (Priya, 2019), during pregnancy and post-partum, the risk of women experiencing physical domestic violence increases compared to when they were not pregnant or not in the post-partum period. If domestic violence occurs, this condition will of course be dangerous for the mother and the baby.

However, the implementation of domestic violence education during the COVID-19 pandemic has not been carried out optimally because there are no cadres who are part of the target. According to research conducted by (Rosida et al., 2020) to improve health services at the primary level, cross-sectoral partnerships and collaborations need to be carried out. In this case, cadres can be partners with midwives in providing education about domestic violence and helping to make complaints about domestic violence around their homes.

Although most of the midwives had carried out education about domestic violence during the COVID-19 pandemic, not all of them had carried out early detection of domestic violence (42.9%). The same finding was also found in (Aziz & El-Gazzar, 2019)regarding the low early detection of domestic violence carried out by health workers, only 35% of health workers had done it.

Different results were found in other studies, it was explained that most health workers (82.3%) had carried out early detection of domestic violence. However, the implementation is only carried out on clients who have experienced signs of domestic violence, such as wounds of unknown cause,

and a history of mental disorders. Also, a history of consuming drugs and alcohol (Saberi, 2017).

The implementation of early detection is mostly carried out by officers using the interview method. This condition is related to the lack of research on early detection tools for domestic violence that can be used and trusted (O'Reilly and Peters, 2018). Also, the interview method is considered to make it easier for health workers to dig up information about domestic violence related to different client conditions (Shea, SC 2016).

Barriers to the implementation of education and early detection of domestic violence carried out in the area of the Lakarsantri District Health Center Surabaya were only felt by a small number of midwives (14.3%). A different condition was found in a study conducted by Saberi (2017) with 83.3% of health workers stating that there were obstacles in controlling domestic violence activities. The difference in results was due to the low number of domestic violence cases during the COVID-19 pandemic that had been handled by midwives.

Some of the obstacles felt by midwives were dishonesty and openness of clients (50%). The same finding is also found in a study conducted by (Poreddi, 2020), this condition occurs because of the client's perception that domestic violence is a personal problem and considers health workers unable to treat domestic violence.

In addition, there are several problems related to the COVID-19 pandemic, namely service restrictions (50%). Service restrictions are related to health service guidelines during the COVID-19 pandemic set by the Indonesian Ministry of Health (Kemenkes, 2020) in the red zone area, it is recommended that health services go online if immediate help is not required. Therefore, midwives feel hampered in providing education and early detection of domestic violence during the COVID-19 pandemic.

Then, the service model that is carried out online in controlling domestic violence is deemed inappropriate. It is proven by the

absence of positive feedback when conducting education. Also, in carrying out early detection of domestic violence. This is related to the public perception that still considers that domestic violence is a personal and confidential problem between husband and wife (Nuzuliana and Istiyati 2020) . In order for a victim to express the problems he is experiencing, good interpersonal communication is needed between officers and victims. Good communication will make victims more open and honest (Fauzia 2019) .

In achieving good interpersonal communication, with an online or online service model, various obstacles can be found. One of them, physical barriers with the victim's body gestures that cannot be seen, noises that can interfere with various communications, and signal interference can occur (Fauzia 2019). Thus, online domestic violence control during the COVID-19 pandemic is deemed inappropriate.

Conclusion

Domestic Violence (KDRT) is a public health problem that still needs special attention. Therefore, the results of this study show that health workers, especially midwives during the COVID-19 pandemic, have controlled domestic violence. Education and early detection efforts carried out by midwives, of course, still face various obstacles. Thus, support in the form of domestic violence control training for midwives also needs to be increased.

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Effectiveness of a Decoction of Binahong Leaves and Red Betel Leaves in Healing Perineal Wounds

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Abstract

The incidence of perineal rupture in Garut Regency in 2020 was 61% of the number of mothers who gave birth, while in Sukasenang Community Health Center in 2022 there were 314 postpartum mothers (33.04%) who experienced perineal wounds and there were 5 cases of perineal infection. Non-pharmacological therapy that can be given to speed up the healing of perineal wounds to prevent infection is using red betel leaf extract and binahong extract. The aim of this research was to determine the effectiveness of boiled binahong leaves and red betel leaves in healing perineal wounds. The type of research in this research is qualitative with a case study approach. The sample used was 2 people using purposive sampling technique. The research results obtained by Mrs. S and Mrs. L Before giving the binahong leaf decoction to the perineal wound there was a grade 2 tear with a reeda score of 6 and after giving the binahong decoction to the perineal wound there was a birth canal wound on the 2nd visit with a score of 4 and on the 3rd visit there was no pain. In conclusion, there is no difference in effectiveness between boiled binahong leaves and boiled red betel leaves in healing perineal wounds in postpartum women. It is hoped that health workers, especially midwives, will continue to improve education and care for perineal wounds by using boiled water from binahong leaves and boiled water from red betel leaves so that postpartum mothers can do it independently.

Keywords

red betel leaves, binahong leaves, perineal wounds

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Introduction

Labor or giving birth to a baby is something that every married couple and the extended family really hopes for and is also a normal thing that happens to women of childbearing age. Welcoming the birth of a baby is a joy for every couple and is something that every family is waiting for, so all moral and material support is poured out by the husband, family, and even all members of society for the welfare of the mother and fetus, but in the birthing process there are quite a few that cause injuries. One of the ways of birth in postpartum mothers is a tear in the perineum. This condition is more at risk in mothers who are giving birth for the first time, giving birth to a large fetus, undergoing a long labor process, or requiring birth assistance, such as forceps or vacuum (Manuntungi, 2019).

According to the World Health Organization (WHO), in 2020 the incidence of perineal rupture in women giving birth in the world was 2.7 million cases, where this figure is estimated to reach 6.3 million in 2050. On the Asian continent alone, 50% of women giving birth experience rupture perineum (Misrina & Silvia, 2022). Based on 2018 Basic Health Research (RISKESDAS) data, it shows that in Indonesia perineal lacerations or ruptures are experienced by 75% of mothers giving birth vaginally. The prevalence of pregnant women experiencing perineal tears in Indonesia in the 25-30 year age group is 24%, and in mothers aged 32-39 years it is 62%. In 2017, it was found that of a total of 1951 spontaneous vaginal births, 57% of mothers received perineal sutures, 28% due to episiotomy and 29% due to spontaneous tearing (Kemenkes RI, 2018).

Based on reports from the West Java Provincial Health Service, the incidence of perineal rupture in West Java in 2020 was 54% of the total number of births, while the incidence of perineal rupture in Garut Regency in 2020 was 61% of the number of mothers giving birth (Dinkes Jabar, 2021).

Sukaenang Community Health Center is one of the community health centers in the Banyuresmi District Area. Based on the Sukasenang Community Health Center's annual report in 2020, there were 237 cases of postpartum mothers (28.7%) who experienced perineal wounds from 823 mothers giving birth, in 2021 there were 231 cases of postpartum mothers (29.3%) who experienced perineal wounds from 786 mothers. giving birth (Puskesmas Sukasenang, 2021). Meanwhile, in the monthly report for 2022, there were 314 postpartum mothers (33.04%) who experienced perineal wounds out of all mothers who gave birth and experienced 5 cases of perineal wound infections (Puskesmas Sukasenang, 2022). One of the direct causes of maternal death is postpartum infection, one of which is caused by perineal wounds that arise due to lack of maintaining perineal hygiene. Complications that occur from perineal lacerations are delayed wound healing and even infection. The symptoms are quite easy to see, namely in the form of a burning and sore feeling in the infected area. Pain when urinating, fever, and smelly vaginal discharge. To prevent perineal wound infections from occurring, efforts are needed to treat the wound by using a bath seat by squatting or sitting then washing the perineal wound with antiseptic fluid (SUKMARANI, 2018). The pain felt by postpartum mothers in the perineum is caused by stitching wounds during childbirth due to severed tissue. Each individual's pain response is unique and relatively different. This is influenced, among other things, by individual experience, perception and social culture. Every postpartum mother has unique perceptions and assumptions about pain during the postpartum period, namely about pain and how the ability to deal with pain. The pain felt by postpartum mothers will affect the mother's mobilization, rest patterns, eating patterns, sleep patterns, the mother's mood, ability to defecate (BAB) or urinate (BAK), daily activities, among others. others in terms of taking care of babies, doing household work, socializing with the environment and society, and inhibiting when mothers start working (Jayatmi et al., 2022).

Efforts to prevent perineal wound infections can be provided with pharmacological therapy and non-pharmacological therapy. Pharmacological therapy is by administering antibiotics and antiseptic drugs (povidone iodine) to treat perineal wounds, however these drugs and ingredients have side effects such as allergies, inhibiti-

ng the production of collagen which functions for wound healing. Meanwhile, non-pharmacological therapy that can be given to speed up wound healing to prevent infection is using betel leaf extract, red betel leaf extract, soursop leaf extract, binahong extract (Siti Amiatin, 2019).

Research conducted by Teti Rostika (2020) regarding the healing of perineal wounds in respondents who used betel leaves tended to heal faster compared to respondents who did not use betel leaves, this was due to the chemical content of betel leaves which can speed up the healing process of perineal wounds. The difference between the research carried out by Teti Rostika and the research plan that will be carried out by the researcher is in the way the betel leaf is applied or applied, in Teti Rostika's research the method of use is by extracting the betel leaf and then applying it to the wound, while the researcher's plan is to use the leaf. Betel leaves are boiled, then the boiled water from the betel leaves is used to clean the perineum wound by washing it or using it as a washcloth (Rostika et al., 2020).

According to Saidah (2022) in the Journal for Quality in Public Health, it was concluded that there was a difference in the effectiveness of healing time for perineal wounds in the intervention group which was given binahong leaf infusion and the control group was not given so that binahong leaf infusion was proven to be effective in accelerating the healing process of perineal wounds so that the binahong plant could used as an alternative to speed up the healing of perineal wounds and reduce the risk of infection in postpartum mothers. In line with research conducted by Rina Hanum (2020) which states that there is an effect of the effectiveness of boiled water from binahong leaves on healing perineal wounds in postpartum mothers (Hanum & Liesmayani, 2020).

TPMB N is a network in the working area of the Sukasena Health Center. Based on the results of a preliminary survey on 24 September 2023 among 10 postpartum mothers. Based on the results of interviews with 10 postpartum mothers who visited the community health center, all of them said that they did not know the benefits of boiled red betel leaves and binahong leaves for treating perineal wounds and had never tried it.

Based on this background, this research aims to "Effectiveness of a decoction of Binahong Leaves and Red Betel Leaves on Healing Perineal Wounds in Postpartum Women in PMB N Garut Regency in 2023".

Method

This research uses a qualitative research design with a case study approach. Qualitative research methods are research procedures that produce descriptive data in the form of written or spoken words from people and behavior that can be observed as it is. Case study is understanding a case, specific people or situation in depth. Qualitative research uses open interview and observation methods to understand individual attitudes, views, feelings and behavior in depth. Researchers tried to explore the responses that emerged in patients in an effort to speed up the healing process of perineal wounds in postpartum mothers. This activity was carried out on 2 babies in TPMB N Garut Regency in 2023. Determining the sample in this study used a purposive sampling technique. The research instruments used were checklists and observation sheets made by researchers to determine the acceleration of perineal wound healing using boiled red betel leaf water.

Result and Discussion

Table 1. Comparison of Midwifery Care Results Between Case 1 and Case 2

Visit	Case 1 (Binahong)	Case 2 (Red Betel Leaf)
Visit I	Perineal wound with a score of 6 (REEDA)	Perineal wound with a score of 6 (REEDA)
Visit II	Birth canal wound with a score of 4 (REEDA)	Birth canal wound with a score of 4 (REEDA)
Visit III	Birth canal wound with a score of 0	Birth canal wound with a score of 0

Effectiveness of Binahong Leaf Decoction in Healing Perineal Wounds in Postpartum Women

Based on the results of research on Mrs. S gave birth to her first child one day ago and complained that the birth canal wound was a little painful and there was a grade 2 tear with a REEDA score of 6. The management given to Mrs. S, namely by providing non-pharmacological therapy using boiled binahong leaves for 5 days which can speed up the process of healing the birth canal, namely 10 binahong leaves boiled in 800 ml water using medium heat until reduced by 600 ml then washed in warm (not hot) conditions. 2 times, namely every morning and evening.

The results of the second visit after being given boiled water from binahong leaves showed that the birth canal wound no longer felt painful and they were still using boiled binahong leaves as a treatment for birth canal wounds. The birth canal wound was scored 4 and at the third visit the birth canal wound was no longer painful and the condition was getting better. Birth canal wounds with a score of 0. This shows that there is a decrease in the wound scale from 6 to 0.

According to Herliman's (2022) study, the statistical test results showed a p-value of less than 0.000, indicating a difference in the effectiveness of air purification for binahong and air purification for sirih compared to the perineum purification of a newborn at Puskesmas Saketi, Pandeglang in 2020 (Herliman et al., 2022).

According to Pratiwi (2020), there is a significant difference in the speed at which the process of perineum whitening may be completed when airbrushing is used. This is especially true for postpartum women (Kusuma, 2020). The results of this study are in line with research by Susanti et al. which showed that mothers with perineal wounds who were given boiled water from binahong leaves recovered on average on the 5th day with an average healing time of 5.46 (Yamin & Nurcahyani, 2022). Similar results were provided by Liesmayani et al.'s research regarding the effectiveness of boiled water from binahong leaves in healing perineal ruptures. The result was 90.9% healing of

perineal ruptures in the good category with an average healing time of 5 days (Liesmayani et al., 2021) The results of this study are in line with the theory that treatment for perineal wounds can be carried out using pharmacological and non-pharmacological methods. Pharmacologically, namely by giving antiseptic drugs. Antiseptic or antibiotic treatment for the treatment of perineal wounds currently tends to be avoided. Some antibiotics should be avoided during lactation, as they are very significant and risky. This is the reason why midwives advise postpartum mothers to use binahong leaves as a medicine that speeds up the healing of perineal wounds (Endang & Elisabeth, 2013).

Postpartum mothers who consumed a glass of binahong leaf boiled water once in the morning experienced faster healing of perineal wounds (Surjantini & Siregar, 2018). According to research conducted by Gusnimar (2021), the saponin contained in Binahong has the ability to act as an antiseptic which can prevent the growth of microorganisms in wounds so that they do not experience infection. The flavonoids in the Binahong plant have anti-inflammatory properties which can prevent oxidation in wounds. Flavonoids can also cause damage to the structure and changes in the permeability mechanism of bacterial cell walls. Applying binahong leaves to wounds helps wound healing by forming more granulation tissue and healing occurs more quickly compared to wounds that were not given binahong leaves. (Gusnimar et al., 2021). Giving boiled water from binahong leaves is also able to inhibit the growth of bacteria in vitro, namely salmonella typhi bacteria, Escherichia coli bacteria and Propionibacterium acnes bacteria (Ariani, Syikir, et al., 2022).

The researcher's assumption is that perineal wounds are wounds in the birth canal experienced by mothers after giving birth. If they are treated properly, one of which is using boiled water from binahong leaves, the perineal wounds will begin to improve within a week. This can be seen from observations of wounds in postpartum mothers where

the score obtained is 6 to 0, meaning the condition of the perineal wound is in good condition. Therefore, health workers, especially midwives, can provide midwifery care by providing complementary therapy to help speed up the healing of perineal wounds using boiled water from binahong leaves and can provide education to postpartum mothers so they can do it independently.

Effectiveness of Red Betel Leaf Decoction in Healing Perineal Wounds in Postpartum Women

Based on the results of research on Mrs. L gave birth to her first child one day ago and complained that the birth canal wound was a little painful and there was a grade 2 tear with a REEDA score of 6. The management given to Mrs. L, namely by providing non-pharmacological therapy using boiled red betel leaves for 5 days which can speed up the healing process of the birth canal, namely 10 red betel leaves boiled in 800 ml water using medium heat until reduced by 600 ml then washed warm (not hot). 2 times, namely every morning and evening.

The results of the second visit after being given boiled water from binahong leaves showed that the birth canal wound no longer felt painful and they were still using boiled red betel leaves as a treatment for birth canal wounds. The birth canal wound was scored 4 and at the third visit the birth canal wound was no longer painful and the condition was getting better. Birth canal wounds with a score of 0. This shows that there is a decrease in the wound scale from 6 to 0.

Treating perineal wounds using betel leaf water can reduce discomfort, cleanliness, prevent infection and improve wound healing (Milah, 2021). The results of this study are in line with Yuliaswati and Kamidah's research which showed that the use of green betel can accelerate the healing of perineal wounds, with the average healing time for perineal wounds being 6.85; meaning that the mother recovered on the 6-7th day after being given boiled betel leaf water (Yuliaswati, 2018). This is strengthened by the research results of Christina and Kurniyanti which show that betel leaves are effective in healing perineal wounds with an average recovery period for perineal wounds of 6 days This is in line with research conducted by Teti Rostika (2020) regarding the healing of perineal wounds in respondents who used betel leaves tended to heal faster compared to respondents who did not use betel leaves, this is due to the chemical content of betel leaves which can speed up the wound healing process. perineum. The difference between the research carried out by Teti Rostika and the research plan that will be carried out by the researcher is in the way the betel leaf is applied or applied, in Teti Rostika's research the method of use is by extracting the betel leaf and then applying it to the wound, while the researcher's plan is to use the leaf. Betel leaves are boiled, then the boiled water from the betel leaves is used to clean the perineum wound by washing it or using it as a washcloth. (Rostika et al., 2020).

In the journal Ari Christiana Mizam Ari Kurniyanti "Effectiveness of boiled water from betel leaves in accelerating the healing of perineal wounds" data was obtained that perineal suture wounds in postpartum mothers healed and dried on the 3-4th day post partum and there were no signs of infection (Ariani, Oktafiani, et al., 2022). The results of this research are in line with the results of research by Yuliaswati (2018) at the Depok City Health Center, West Java, which showed that it was proven that the use of betel can accelerate the healing of perimium wounds (p=0.010). This is also in line with the results of research by Mariati (2018) at the Independent Practicing Midwife, Baros Sukabumi District, showing that red betel leaves are more effective than iodine in treating perineal wounds during the postpartum period. Also in Christiana's (2017) research, boiled water from betel leaves is effective in the speed of healing of perineal wounds in postpartum women with p = 0.000 (Karlina et al., 2023).

According to researchers' assump-

tions, perineal wounds will actually heal by themselves by caring for the wounds independently, such as cleaning the perineal area every time you shower, after urinating or defecating, but this takes quite a long time and is susceptible to infection, based on the results of field research. Giving boiled water from soursop leaves turned out to be effective in helping the healing process of perineal wounds, so the researchers assumed that post partum mothers who treated perineal wounds using boiled water from red betel leaves mostly experienced a faster healing process for perineal wounds compared to normal wound care. This is because the red betel plant contains antiseptics which can kill germs and can increase resistance to infection and speed up wound healing.

Comparison of the Effectiveness of Decoction of Binahong Leaves and Red Betel Leaves in Healing Perineal Wounds in Postpartum Women

Based on the results of research on Mrs. S had a grade 2 tear with a REEDA score of 6. The results of the second visit after being given boiled water from binahong leaves showed that the birth canal wound was no longer painful and he was still using binahong leaf boiled water as a treatment for birth canal wounds. The birth canal wound was scored 4 and at the third visit the birth canal wound was no longer painful and the condition was getting better. Birth canal wounds with a score of 0. This shows that there is a decrease in the wound scale from 6 to 0.

Meanwhile, Mrs. L had a grade 2 tear with a REEDA score of 6. The results of the second visit after being given boiled water from red betel leaves showed that the birth canal wound was no longer painful and the binahong leaf decoction was still used as a treatment for birth canal wounds. The birth canal wound was scored 4 and at the third visit the birth canal wound was no longer painful and the condition was getting better. Birth canal wounds with a score of 0. This shows that there is a decrease in the wound

scale from 6 to 0.

This is reinforced by the results of research by Gupta et al. in India, which shows that there is a difference in effectiveness between boiled water from binahong leaves and boiled water from betel leaves in healing perineal ruptures (p=0.001). Boiled water from Malabar spinach leaves (binahong leaves; Indonesia) shows better results in healing perineal wounds compared to boiled water from betel leaves (piper betle) (Amini, 2023). It is supported by research by Zeranikaet al. that there is a difference in effectiveness between betel leaf boiled water and betel leaf boiled water in healing perineal ruptures (p=0.000). The group given boiled water from binahong leaves recovered on the 6th day, while the control group recovered on average on the 7th day (Zeranika et al., 2022).

From these two results, the researchers assumed that the use of boiled water from binahong leaves and boiled water from red betel leaves was equally effective in healing perineal wounds for respondents so that there was no difference between the two because they both healed in the same reactive time.

Conclusion

Based on the results of research on Mrs. S and Mrs. L with a grade 2 birth canal injury, the results are as follows: There is effectiveness of boiled binahong leaves in healing perineal wounds in postpartum women with a perineal wound score before being given boiled water from binahong leaves of 6 and after being given boiled water from binahong leaves of 0. There is effectiveness of red betel boiled water on healing perineal wounds in postpartum women with a score of 6 before being given red betel leaf boiled water and 0 after being given red betel leaf boiled water. There is no difference in effectiveness between boiled binahong leaves and boiled red betel leaves in healing perineal wounds in postpartum women.

It is hoped that the results of this research can help increase family or community knowledge about the treatment and care of perineal wounds using boiled water from binahong leaves and red betel leaves by washing or cleaning the wounds so that people can do it independently according to the instructions.

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Midwifes' Antenatal Service Perfomance on Standard Based Management and Recognition

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Abstract

The evaluation of antenatal services held by midwives in Cilegon uses standard based management and recognition (SBMR). The purpose of this study was to determine the performance of community midwives in providing antenatal services based on the SBMR at Cilegon Helath post in 2021. The research method used a qualitative approach. The performance of the midwife was observed, followed by interviews, and follow ups to other informants using interviews and discussions. This research was carried out in Cilegon and Citangkil 2 Primary Healthcare Centers, Cilegon City. The main informants in this study were the community midwives, the key informants were the head of the community midwives, the head of Primary Healthcare Centers, and the Head of the Family Health Department. The performance of the midwives in accepting and communicating pregnant women with respect and kindness has been carried out well. Likewise, the implementation of the physical examination, obstetric examination and planning for the next visit was also good. Meanwhile, the performance of midwives in anamesis and assessment, counseling and delivery planning was still not up to the standard, according to the informant it is caused by the large number of pregnant women and the limited amount of health personnel. Anamnesis can assist assessment and proper diagnosis. According to the informants, the performance aspects that are still not up to standard can be improved by submitting a two-day schedule for the health post, adding the number of health personnel, the use of communication media and periodic performance appraisals.

Keywords

antenatal, community midwife, health post

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Introduction

Performance is a comparison between the work that has been achieved with the standards that have been set.(Dessler, 2000) In the context of management, the definition of performance is a person's work based on the quantity or quality he has achieved in carrying out his duties and functions in accordance with his responsibilities and authorities.(Mangkunegara, 2017) In addition, performance is the appearance of a person or group.(Gibson et al., 1997)

The performance of a midwife must follow the standards to ensure the quality of the services provided.(Rezeki & D, 2014) In improving the quality of health services for pregnant women, the Cilegon City Health Department uses the SBM-R (Standard Based Management Recognize) tool to assess the performance of midwives. SBM-R is a performance quality improvement approach designed to empower frontline workers, in this case midwives to achieve improvements in the services they provide, especially maternal and child health.(USAID, 2012) Community midwives in Cilegon City have received SBMR training, until 2018 there have been 43 community midwives trained in SBMR, but due to frequent changes of community midwives, there are still community midwives who have not received SBMR training (Mohamed Rashid Sokwala & Dodia, 2023).

The Standard Based Management Recognize was developed by JHPIEGO, an international non-governmental organization that aims to improve the welfare and health of mothers and babies (Muhumuza et al., 2023). SBMR with focused antenatal care consists of 9 (nine) standards, standard 1 is the availability of the rooms for conducting antenatal care, standard 2 is the availability of tools for pregnant women, while the standard for antenatal performance is by measuring standards 3 (three) to standard 9, those standards consists of: standard 3: the midwife accepts and communicates pregnant women with respect and kindness, Standard 4: The midwife performs anamnesis and assessment, standard 5: the midwife performs a physical examination correctly, standard 6: the midwife performs an obstetric examination correctly, Standard 7: midwives arranging health education and counseling properly, Standard 8: midwives help mothers and families plan delivery, and standard 9: midwives evaluate care and plan with the mother in the next visit.

Cilegon's government have agreed that the SBM-R assessment should beheld 2 times a year. The results of the assessment are used to evaluate the performance of the midwives and are followed up by the Primary Healthcare Center. Assessment of the performance of midwives in providing antenatal services using the SBM-R format is done by placing a check mark (√) if the item is available or has been implemented. (USAID, 2012) Since 2019, there has been no performance appraisal activities for community midwives in antenatal services based on the SBMR in the two Primary Healthcare Centers due to the large number of Primary Healthcare Centers activities to deal with the COVID-19 pandemic. All Primary Healthcare Centers programs in 2019 focused on handling the COVID-19 outbreak.

Method

This research design used a qualitative approach. The performance of midwives was evaluated through observation, then followed by in-depth interviews, and also followed by other informants with a FGD (Focus Group Discussion). The research was conducted at the Citangkil 2 Primary Healthcare Center and Cilegon Primary Healthcare Center in April and May 2021. The main informants in this study were the community midwives, the key informants head of the community midwives, the head of Primary Healthcare Centers, and the Head of the Family Health Department.

The midwife performance assessment began with the observation of nine commu-

nity midwives in providing antenatal care to 27 pregnant women at the Health post, with one community midwife providing antenatal care to three pregnant women. During the observation, the researcher and the informants agreed that the research time was one hour (single observation).(Sugiono, 2020) Observation was done by taking into account the observation guidelines.The community midwife knows that she will be observed in providing services and knows who will observe it (overt observation).(Sugiono, 2020) The tools used in addition to observation instruments are: video recordings used to record observation activities. The researcher was assisted by an assistant in conducting the observations, this study used the SBM-R checklist instrument. The researcher puts a check mark (√) in the "YES" column if the service is provided by the community midwife.

FGDs were conducted with informants: community midwives, pregnant women and Primary Healthcare Centers midwives. The FGD technique is an interview with a small group led by a moderator, where the FGD participants are homogeneous. (Tolley et al., 2016) In-depth interviews were conducted with the informants: community midwives, head of the community midwives, the head of Primary Healthcare Centers, and the head of the Family Health Department. Interviews were made using interview guidelines where the interviewer asks questions to the interviewee. (Moeleong, 2017) The information obtained is processed manually and then analyzed. Before conducting the data analysis, the researcher collected all the raw data that was made into a transcript. (Sugiono, 2020)

Result and Discussion

Characteristics of Informants

Observations were done on midwives, with an age range of 24-47 years, the education level of most respondents were midwifery associate degrees (6 people). The length of work experience for the community midwifes were between 1-27 years. For the FGD respondents, the community midwives had an age age range of 33-56 years, with the majority having a midwifery associate degree. The next FGD activity was carried out on 8 pregnant women informants with an age range of 21-36 years with the majority having a high school education level and 32-37 weeks gestational age. Interviews were conducted on the informant of head of the community midwives, the head of Primary Healthcare Centers, and the head of the Family Health Department.

Midwife Performance

Standard 3: Midwives communicate pregnant women with respect.

Consisting of six activity criterias, for the 1st activity criteria the observer saw and heard that all community midwives greeted the pregnant women in a friendly manner, greeting pregnant women by asking how they are. For the second activity criteria the observer listened throughout the examination, that all midwives when communicating with pregnant women mention the name of pregnant women with "teh" or "teteh" (equivalent with ma'am). For the third activity criteria the observer heard that all community midwives told the mothers what to do before doing the examination and when to do the physical and obstetric examination. For the fourth activity criteria the observers saw that most community midwives encouraged the pregnant women to ask further questions:

"Do you want to ask anything else ma'am?" (Informant Bd 6)

However, there is still a midwife who did not recommend pregnant women to ask further questions. For the fifth activity criteria the observer heard the community midwives communicated well with active discussions. For the sixth activity criteria the observers heard all community midwives answered questions from pregnant women using language that was easy to understand.

For Standard 3, there was only one

midwife who did not perform according to the standard, in which she didn't do criteria 4: encourage pregnant women to ask further questions as the pregnant women had asked a lot of questions.

Standard 4: Midwives perform anamnesis and data assessment consisting of five activity criterias.

For the first activity criteria it was found that all midwives asked and recorded the identity of the mother, the observer saw that all the midwives confirmed the identity of the pregnant women, For the second activity criteria all midwives asked and recorded the history of the current pregnancy. The observer analyzed whether the midwife checked the suitability of the first day of the last menstrual period with the current gestational age, such as:

"..If counted from the last menstruation date the current gestational age is 33 weeks, is it correct ma'am? ..." (Informant Bd 1)

For the third activity criteria it was found that some midwives did not ask whether there are danger signs and complications regarding the current pregnancy. Almost all midwives did not ask and record the danger signs of pregnancy. Some pregnant women said that the midwife never informed the danger signs and complications of pregnancy.

"You haven't explained the danger signs, like the ones in the pink book." (Informan Ih 6)

For the fourth activity criteria it was found that several midwives did not ask and record the history of the previous pregnancy, childbirth and postpartum. For the fifth activity criteria it was found that almost all midwives did not take anamnesis and recorded current/previous illnesses. This was also reinforced by pregnant women who said the midwife did not ask about the illness they had suffered,

"It seems that the midwife didn't ask me regarding health problems during my pregnancy check-up" (Informan Ih 3)

For standard 4, it can be concluded

that there are still many midwives who do not provide services that meet the standards, especially in activities asking for danger signs and complications of current pregnancy. During the Covid-19 pandemic, anamnesis taking and patient data assessment was still carried out offline, although pregnant women wore masks but the distance between pregnant women and midwives was less than one meter. There is no policy in Cilegon City for anamnesis and data assessment of pregnant women during the COVID-19 pandemic.

Standard 5: Midwives perform physical examination correctly, consisting of eight activity criterias.

For the first activity criteria it was found that all midwives kept their hand hygiene with running water or hand sanitizers before or after the examination, then they used gloves. This research was conducted during the COVID-19 pandemic. For the second activity criteria, it was found that there were only a few midwives who did not count the pulse of the pregnant mother. Counting the pulse should be done before measuring blood pressure. For the third activity criteria observers saw that all community midwives performed blood pressure measurements on all pregnant women.

For the fourth activity criteria observers found that the several midwives did not examine the conjunctiva and did not examine thyroid enlargement. In addition, most midwives did not perform breast and extremity examinations. For the fifth activity criteria all midwives were found to have checked hemoglobin by referring the pregnant women to the primary healthcare centres.

In standard 5 it can be concluded that there are still midwives who did not perform physical examinations according to the standard especially palpation examinations (enlargement of the breast and extremities).

Standard 6: Midwives check the correct obstetrics implementation which consists of five activity criterias.

For the first and second activity criterias, it was found that all midwives measured

the height of the uterine fundus and examined the position of the fetus. For the third activity criteria, it was found that there was still one midwife who did not check the fetal heart rate. This was confirmed by one of the pregnant women informants who said that the fetal heart rate examination was not carried out.

"… The heart rate was not checked by the midwife…." (Informan Ih 1)

During the interview, the head of the community midwives said that there were complaints from the community regarding the performance of midwives when providing antenatal services. This is related to the absence of the fetal heart rate examination.

For the fourth activity criteria, it was found that all midwives recorded all findings and examinations obtained in the KIA book (mother and child health book) and mother card. For the fifth activity criteria it was found that all midwives provided information on the findings of the examination to all pregnant women.

For standard 6 it can be concluded that there is still a midwife who did not check the fetal heart rate, because the equipment used was damaged.

Standard 7: Midwives provide health education and counseling properly, consisting of eight activity criteria.

For the first activity criteria, it was found that all midwives calculated the gestational age. The results of the observation stated that all midwives always saw and asked the first day of the last menstrual period of pregnant women and then informed the mothers of their current gestational age.

"If counted from first day of the last menstrual period the gestational age is 33 weeks ma'am.." (Informan Bd 1)

For the second and third activity criteria, it was found that all midwives were able to overcome the discomfort that may arise in pregnancy physiologically and met the needs and overcame the problems presented by pregnant women.

For the fourth activity criteria, almost half of the midwives did not explain the nut-

ritional needs and the dangers of using unecesarry drugs. For the fifth activity criteria, all midwives did not discuss the importance of washing hands with soap. For the sixth activity criteria, almost all midwives did not conduct health education regarding exclusive breastfeeding for pregnant women.

For the seventh activity criteria, there were still many midwives who did not explain the danger signs of pregnancy. This was also conveyed by the puskesmas midwife that the thing that was difficult or rarely done by the community midwife in antenatal care was providing health education or counseling, especially the danger signs of pregnancy.

"….I think counselling is seldom done…" (Informan Bp 8)

For the eight activity criteria, almost all midwives did not discuss postnatal contraception with pregnant women. From the results of the FGD pregnant women said that the community midwife did not provide health education or counseling on personal hygiene, nutritional needs and exclusive breastfeeding. There was also additional information from the statements of several pregnant women who said that health education had been given but it was incomplete.

In standard 7, almost all midwives have not carried out antenatal services according to the SBMR standard. Community midwives tend to provide antenatal service counselling that are only according to the needs of pregnant women.

Standard 8: Midwives assist mother and family in planning delivery. There are nine activity criterias. It was found that almost all midwives did not help mothers and families in planning childbirth. Birth planning includes birth attendants, place of delivery, transportation, delivery equipment, companions and blood donors. The midwife did not discuss the signs and symptoms of labor and when the pregnant women should contact the midwife.

The majority of midwives did not use the KIA handbook to record and deliver the P4K (Birth Planning and Complication Pre-

vention Program) counseling to pregnant women. During the COVID-19 pandemic, Cilegon City did not have a policy on how to do implement a Birth Planning and Complication Prevention Program during the pandemic, which could reduce direct contact time with the community. Birth Planning and Complication Prevention Programs are still carried out by community midwives directly, which consists of direct questions and answers to pregnant women. The results of these observations were also strengthened by the results of the FGD, pregnant women said that the midwife did not ask about the delivery plan.

Standard 9: The midwife evaluates care and plans with the mother the next visit. Consisting of 3 activity criteria, it was found that all midwives planned with the mother for the next visit, and recorded the results of the examination. However, there are still a few midwives who did not recommend the pregnant women that they can come at any time if necessary.

The results of interviews with midwives about antenatal care at Health post said that what has been done is still not up to standard.

"I think the examinations in the Health post are not perfect..." (Informan Bd 9)

"There are 43 different community midwives in the City of Cilegon, some of them still provide care that is not up to standard.." (Informan K5)

According to community midwife informants, things that were difficult and rarely done were: asking and nothing signs of danger, history of illness, advice birth *(amanat persalinan)*, history of taking herbal medicine or drugs that have been consumed, exclusive breastfeeding and postpartum family planning.

In the other hand, the informant said that the obstacles to achieving performance in antenatal services were that several Health post had a large number of pregnant women, there was very limited time, the assessment of antenatal performance using the SBMR tool had too many points that had to be done, the equipment was damaged, and the Health post services only consisted of midwives.

According to the informant, improvements regarding the performance can be done by submitting a proposal for facilities and infrastructure that are still lacking, submitting a schedule for Health post with 2 visits, hold a discussion of the results of the SBMR evaluation, performance appraisal of midwives who regularly attend training, apply SBMR in every antenatal service and adding health workers to Health post services that have multiple targets.

Discussion

Based on the results of the research, the performance of the community midwife in providing antenatal services has not met the SBMR standard.

During the FGD and in-depth interview, according to the informant, the obstacles in achieving this performance were due to the large number of pregnant women in the Health post, the limited time available, the large number of items or performance points at the SBMR, the health workers were only community midwives, the equipment was damaged and not available. Also, the community development team consisting of community nurses, community midwives and health promotion officers did not run optimally in health services at the Health post.

The city of Cilegon didn't have a policy which limits the number of pregnant women who perform antenatal care at the Health post. To prevent transmission in health care facilities, the government issued an appeal letter from the Director General of Health Services at the Ministry of Health Number YR.03.03/III/III8/2020 concerning the Appeal for No Routine Practices except for Emergencies in Health Service Facilities so that this has an impact on changing the order in the community regarding access to health care facilities.

Standard 3 shows that all community midwives greeted mothers and their com-

panions in a friendly manner, but there is still a midwife who did not encourage pregnant women to ask questions. According to the midwife, this was because the patient had asked many questions about her health, so the midwife forgot to advise pregnant women to ask questions. This is not in line with Puspitasari's researched In which all community midwives had received and communicate pregnant women with respect and friendliness. (Puspitasari, 2018) A friendly and professional approach will allow the formation of chemistry between pregnant women and midwives. Midwives should also give the mother an opportunity if she wants to spend time with the midwife to discuss the problem in private.(Diane & Margaret, 2009)

Standard 4 showed that all community midwives had asked the mother's identity and first day of the last menstrual period, gestational age and estimated delivery but there were still midwives who did not ask for the first fetal movements. This is because some pregnant women came with a large gestational age. There are still many community midwives who did not take anamnesis and study data for danger signs and complications of pregnancy and there are still some midwives who did not ask and record the history of past pregnancy and childbirth, the history of the weight of the baby born and the condition of the baby, this is because the mother did not bring the KIA book for examination, so the midwife forgot to take an anamnesis. This is in line with the research conducted by Puspitasari, in which all midwives did not take a complete anamnesis and complete review on patient data, only according to what the mother feels at that time. (Puspitasari, 2018)

During the COVID-19 pandemic, anamnesis and patient data assessment can be carried out using communication tools for efficient service time with patients. The first examination required is anamnesis and data assessment of pregnant women. The examination can be held by appointment. However, if pregnant women still come to the Health post, then ANC services can be held by the midwife and be referred for medical services and laboratory tests to screen the risk factors.(Kemenkes RI, 2020) In Cilegon, there are no midwives who take anamnesis and study patient data using communication media or google forms, midwives still held anamnesis directly face to face with pregnant women.

For Standard 5 the observations found that all midwives washed their hands under running water or use a hand sanitizer, measured blood pressure, and checked the patient's hemoglobin. Only a few midwives did not count the pulse, some used a digital blood pressure meter so they could see the pulse measurement results along with the blood pressure results. In addition, almost all s community midwives were found not to have performed extremity checks (Kubra et al., 2021).

The community midwife said that this happened because they only attended antenatal care with the 10 T standard, some of the midwives said they forgot to do it even though they knew what to do, this is in line with Puspitasari's research, in which all community midwives used the 10 T standard in providing antenatal services and most midwives did not know the standard of antenatal examination using the SBMR tool.

Physical examination is useful to determine the health of the mother and fetus, as well as changes that occur at a subsequent examination.(Mufdillah, 2017) Physical examination is important to assess pregnant women and their families thoroughly by monitoring the growth and development of the baby by recognizing the danger signs associated with pregnancy. (Salmah et al., 2006)

Breast examination is used to detect abnormalities and prepare for breastfeeding. Midwives need to inform pregnant women about changes in the breasts as pregnancy progresses. Some mothers will understand information about changes in body shape and size, but are often not aware of changes in breast shape.(Salmah et al., 2006) Accord-

ing to Cunningham et al, it was explained that during pregnancy the size of the thyroid gland will increase by approximately 13% due to hyperplasia of the glandular tissue and increased fascicularity, it is necessary to examine the thyroid gland for abnormal enlargement of the thyroid gland.(Salmah et al., 2006)

For Standard 6, a midwife who did an incomplete obstetric examination was found, in which the baby's heart rate was not checked because the doppler tool was broken. This was confirmed by the informant who said that the baby's heart was not examined. The results of this study are not in line with Puspitasari's research, in which all community midwives at the Jelbuk Primary Healthcare Center and Wuluhan Primary Healthcare Center have performed the obstetric examination correctly.

For Standard 7, the results of observations found that all midwives have calculated the gestational age with the mother, overcame any discomfort or problems that may arise, and met the needs of the mother. However, almost half of the midwives did not provide health education and counseling on nutrition, unnecessary use of medicine, exclusive breastfeeding and postpartum family planning to mothers. All community midwives do not provide the health education on the importance of hand washing and there are still many midwives who do not provide counseling about the danger signs of pregnancy.

The obstacle in achieving this performance is that the time that the community midwife has limited time to perform counseling and examination at the same time and the place not ideal for privacy. Research conducted by Puspitasari, in which all midwives did not provide explanations about health education and counseling about the danger signs of pregnancy. This is because the majority of the community midwives only provide counseling according to the problems and discomforts of the mothers. (Salmah et al., 2006)

Counseling for pregnant women can be assisted with a KIA book, but in the implementation of counseling, midwives do not always use media or assistive devices. The use of media or communication providing information or messages is highly recommended, because in general pregnant women only have secondary education and do not understand pregnancy. (Almuslim & Aldossary, 2021) One of the efforts to prevent the COVID-19 pandemic by pregnant women is to wash their hands, this needs to be known by all pregnant women. Washing hands with running water for 20 seconds or using hand sanitizers can be found in the KIA handbook. (Kemenkes RI, 2020)

In reducing counseling time and preventing transmission of COVID-19, midwives can encourage pregnant women to get counseling services use telehealth services. As stated by Almuslim and Aldossary, pregnant women can replace their health services by using telehealth services if they do not require laboratory and physical examination services, especially on the second visit. (DepKes, 2009) However, this has not been widely disseminated to pregnant women in the Cilegon City area.

For Standard 8, the observers found that almost all community midwives did not assist mothers and their families in their delivery planning process. This is not in line with Puspitasari's research, which states that all community midwives assisted mothers in planning childbirth. Delivery planning or known as the Delivery Planning and Complications Prevention Program which has the aim of increasing the coverage and quality of health services for pregnant women and newborns through increasing the active role of families and communities in planning safe deliveries and preparing for complications and danger signs.(Sedarmayanti, 2008) With this planning, pregnant women can give birth in a comprehensive health facility and are served by health workers so that the incidence of complications and maternal deaths can be prevented as they can be identified earlier.(Almuslim & Aldossary, 2021) Another goal is for pregnant women and their fam-

ilies to plan their delivery process, including the helpers, companions and blood donors, and referrals. (Saifuddin, 2010)

In reducing the time-consuming health education and counseling activities, it is recommended by the Ministry of better known as P4K (Birth Planning and Complication Prevention Program) by using telecomunication media or google form (Almuslim & Aldossary, 2021), but this has not been done.

Standard 9 found that almost all midwives had evaluated their care and planned their next visit, but still few midwives did not tell the pregnant women that they could come at any time if they felt it was necessary. At each antenatal visit, very important information is needed to confirm the diagnosis. Pregnant women who have health problems should come to visit health workers more often when they feel danger signs or if they feel worried about their pregnancy. (Saifuddin, 2010)

Conclusion

The performance of community midwives in providing antenatal services using SBMR has not met the standards. Midwives' performance results in receiving and Communicating pregnant women with respect and kindness, physical examinations, obstetric examinations and planning for subsequent visits were good, and only a few midwives did not meet the standards. And for the performance of midwives in anamnesis taking and assessment, counseling and delivery planning, there are still many midwives who do not meet the standards, according to the informant this is due to the large number of pregnant women, limited time and limited health personnel. The performance results that are still not up to the standard are due to several obstacles. According to the informant, the way to overcome this is by submitting a two-day Health post schedule, adding health workers, using communication media, and periodic performance appraisals

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Jurnal Kebidanan

UNIVERSITAS MUHAMMADIYAH SEMARANG

Comparative Study of Providing Iron Supplementation to Adolescent Girls with Anemia by Intermittent Administration Compared to Routine Administration

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Abstract

Anemia is currently still a problem and suffered by many adolescent girls, especially in developing countries. The prevalence of anemia in adolescent girls in Indonesia based on Riskesdas 2018 data is 32%, which means that 3-4 out of 10 adolescent girls experience anemia. In some parts of Indonesia the prevalence of anemia reaches 60%. This study aimed to determine the difference in iron supplementation in adolescent girls with intermittent anemia compared to routine supplementation against the increase in hemoglobin levels and side effects caused. Research methods used quasi experiment with control group. Sampling used by stratified random sampling technique. Data collection was carried out by measuring hemoglobin levels of adolescent girls before and after intervention in both groups. The independent t-test showed that the significance value in the intermittent group and routine group was 0.334, which means that the variation in both groups was the same (>0.05). The results of the t test obtained a p value of 0.379 which means that between giving iron supplementation both intermittently and routinely did not provide a difference in the results of hemoglobin levels in adolescent girls. This shows that intermittent iron supplementation can still increase hemoglobin levels. Giving iron supplementation can be given intermittently or routinely both can increase hemoglobin levels in adolescent girls with anemia. Consideration of giving iron supplementation can be considered on the side effects that may be caused so that intermittent administration can be an alternative to continue to increase hemoglobin levels with fewer side effects felt.

Keywords

adolescent girls, anemia, iron supplementation

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Introduction

Anemia is one of the most common and not easily addressed global health problems in both developing and developed countries affecting human health as well as social and economic development (Organisasi Kesehatan Dunia, 2011). Anemia is defined as a condition of the body with a red blood cell count or hemoglobin level lower than normal which is 12 g / dL in women who are over 12 years old and not pregnant (Tandoh et al., 2021). The WHO report shows that 52% of pregnant women and about 40% of normal women experience anemia in developing countries due to iron deficiency. About 43% of children under 5 years of age have anemia, 27% of adolescents in developing countries, and 6% in developed countrie (Prasanth, 2017). The prevalence of anemia in Indonesia has increased significantly since 2007 – 2018 (Anggraeni, 2021) . Riskesdas 2018 data shows that the prevalence of anemia in adolescents in Indonesia is 32%, meaning that 3-4 out of 10 adolescents suffer from anemia (Kementerian Kesehatan Republik Indonesia, 2021).

Adolescents are included in the population that is prone to anemia. The vulnerability of the adolescent group is associated with an increased need for micronutrients (such as iron and folic acid) for physical growth (Al-Jermmy et al., 2022). Anemia in adolescent girls also occurs due to reproductive maturation and cognitive transformations in the course of life. In addition, anemia also occurs due to direct causes that often appear together, namely parasitic infections, inflammatory disorders, blood loss during menstruation and congenital abnormalities of hemoglobin structure. The most common causes of anemia include nutritional deficiencies, especially iron deficiency which is at least 50% of anemia cases (Balcı et al., 2012).

In adolescents, anemia can cause growth disorders, decreased physical fitness (easily tired, lethargic, dizzy, easily sleepy) and an increased risk of infection. In addition to adversely affecting physical growth and health status, anemia also affects cognitive development, hindering achievement in school as well as future work productivity. Adolescents with anemia who experience pregnancy can increase the risk of maternal and infant death, childbirth complications giving birth to babies with low birth weight, and increase the risk of stunting in children (Anggraeni, 2021), (Al-Jermmy et al., 2022).

The World Health Organization monitors several programs to help reduce the prevalence of anemia through treatment and prevention. The program established by WHO aims to increase dietary diversity, improve infant feeding practices, and increase the availability of micronutrient intake through fortification or supplementation with iron, folic acid, and other vitamins and minerals (world health organization, 2022). In addition, at the 65th *World Health Assembly* (WHA), WHO also agreed on action plans and global targets for maternal, infant, and child nutrition, with a commitment to halve (50%) the prevalence of anemia in WUS by 2025 (Kementerian Kesehatan RI, 2018).

The government through the Regulation of the Minister of Health of the Republic of Indonesia Number 88 of 2014 has regulated the standard of giving iron supplementation for women of childbearing age and pregnant women. Furthermore, the Minister of Health was followed up with the Circular Letter of the Director General of Kesmas Number HK.03.03/V/0595/2016 concerning the provision of iron supplementation to adolescent girls and women of childbearing age. One of the intensification strategies for prevention and control of anemia in adolescent girls and WUS is to prioritize the provision of iron supplementation through school institution (Kementerian Kesehatan RI, 2018).

Research by Permatasari, *et al* (2018) showed that the prevalence of anemia in adolescent girls decreased after being given a iron supplementation intervention for 4 months. The prevalence of anemia before

the intervention was 20.9% of 172 subjects decreased to 15.7% after the intervention i.e. decreased by 5.2% (Permatasari et al., 2018). Other studies also showed that the effect of iron supplementation administration on the increase in hemoglobin in adolescent girls who have anemia is with an average increase of 1.550 with p value = 0.001 (Yuanti et al., 2020). This suggests that iron supplementation may increase hemoglobin levels in adolescent girls.

Routine administration of iron supplementation or given every day is associated with side effects that appear namely the presence of mild gastrointestinal symptoms (eg. abdominal pain, vomiting, nausea, diarrhea, constipation). Such side effects are associated with decreased adherence to iron supplementation and may limit the effectiveness of interventions (J. L. Finkelstein et al., 2018). Based on a systematic review it was found that showed that women who received intermittent supplementation with iron alone, or in combination with folic acid or other nutrients, were less likely to develop anemia or iron deficiency than women who did not receive iron supplements or plasebo. In addition, the findings suggest that intermittent supplementation is as effective as daily supplementation in reducing the prevalence of anemia and increasing hemoglobin concentration, with fewer side effects (Fernández-Gaxiola & De-Regil, 2019).

Based on the description of the problem above, the research question in this study is "is there a difference in the provision of iron supplementation in adolescent girls with intermittent anemia compared to routine administration of elevated hemoglobin levels?"

Method

This study used a quasi-experimental research design with control group. The intervention given in this study was the administration of iron supplementation in adolescent girls by measuring hemoglobin levels before and after the intervention was given.

Research instruments that were used in this study include questionnaires on respondent characteristics, hemoglobin measuring devices, the sheet for monitoring the consumption of iron supplementation. The population in this study was adolescent girls. The sample is determined by stratified random sampling technique. The inclusion criteria in sampling are adolescent girls who experience anemia in the mild, moderate and severe categories. Data collection will be carried out in the Working Area of Puskesmas Kedungwuni 1, Pekalongan Regency with the highest anemia prevalence data in Pekalongan Regency, which is 36.97% (Dinas Kesehatan Kabupaten Pekalongan, 2022). The exclusion criteria are adolescent girls who are not willing to be respondents and cannot consume iron supplement due to allergies or other factors. The sample size is calculated based on the mean and standard deviation approaches (Permatasari et al., 2018).

In the initial screening examination, adolescent girls were checked for hemoglobin levels. After knowing the condition of their hemoglobin, adolescent girls who might fall into the category of anemia and were willing to become respondents (given informed consent). The results of the hemoglobin examination become the initial/pre-intervention hemoglobin examination data. Researchers divided respondents into 2 groups, namely the intervention group (25 respondents) and the control group (25 respondents). Next, researchers gave treatment to the intervention group by giving iron supplementation to adolescent girls for intermittent consumption, namely adolescent girls consume iron supplementation 3 times for 1 week with no consecutive drink every day (eg: iron supplementation consumed on Monday, Wednesday, Friday or Tuesday, Thursday, Saturday) (Fernández-Gaxiola & De-Regil, 2019). In the control group, the intervention was given by giving iron supplementation to adolescent girls with anemia to take iron supplementation daily on a regular basis (J. Finkelstein et al., 2018). This inter-

vention is given for 8 weeks or 2 months. The provision of interventions was monitored using a monitoring checklist of iron supplementation consumption and assisted by the next of kin to ensure that iron supplementation has been consumed by adolescent girls. Researchers also helped to remind the iron supplementation consumption schedule through online reminders via short message / WA (*WhatsApp*) with confirmation of answers from respondents. After 8 weeks, researchers conducted hemoglobin tests on respondents to obtain final data / post intervention.

Data analysis was carried out after the data completed. Data processing was carried out with the aim that the information produced in this study can be ascertained to be correct. Data processing carried out by researchers goes through the following stages Editing (checking the completeness of the data), Coding (giving code to the data that has been collected), Processing (entering data from coding done in the previous stage into the computer program), Cleaning (checking the data that has been entered into the computer program and ensuring that all data entered was correct (Amruddin et al., 2022).

After the data was processed, then the data was analyzed univariately and bivariately. Univariate analysis in this study was characteristic of respondents. Age variables include types of numerical data to be analyzed by calculating the mean value, maximum value and minimum value. Other variables of categorical data type was analyzed by calculating the frequency and percentage of variables. Bivariate analysis was performed to see the effect of iron supplementation in each group. The statistical test used a paired sample t-test. After that, proceed with an independent sample t-test to analyze the differences between the two different groups.

Result and Discussion

Univariate analysis describes the characteristics of research respondents based on demographic data related to the dependent variable of the study. The following table 1 is the result of univariate analysis of this study.

The average age in the routine group was older than in the intermittent group, but the age range of the routine group was more at 15-19 years compared to the intermittent group of 16-18 years. Height in both groups had almost the same average value, namely at 153.68 and 153.56. Similarly, the weight variable has almost the same average value of 48.88 and 48.12. Similar to the age variable, the upper arm circumference of the routine group had a greater range of 19.5-31.5 cm than in the intermittent group. However, the average circumference of the upper arm was higher in the intermittent group than in the routine group. The average age of menarche in both groups was around 12 years with the youngest menarche being 10 years old in the intermittent group and the oldest being 15 years old in both groups.

In addition to describing the characteristics of respondents, univariate analysis also described Hemoglobin levels before and after blood tablets were given in both groups. The average Hemoglobin levels before being given blood-added tablets were almost the same in both groups (Purnama Hamudi et al., 2022). The average Hemoglobin levels after being given blood-added tablets in the routine group were higher than intermittent rice, but both groups experienced an increase in Hemoglobin levels after being given blood-added tablets. The increase in Hemoglobin levels in both groups also occurred at minimal and maximum values. The results of univariate analysis of Hemoglobin levels in both groups are presented in Table 2 below.

Hemoglobin is an erythrocyte tetrameric protein that binds to non-protein molecules, namely the iron porphyrin compound called heme (Khoeroh et al., 2024). Hemoglobin has two important transport functions in the human body, namely transporting oxygen to tissues and transporting carbon dioxide and protons from peripheral

tissues to respiratory organs. The amount of hemoglobin in erythrocytes is low, so the ability of erythrocytes to carry oxygen to all body tissues will also decrease and the body will become deficient in oxygen. This will cause anemia (Gunadi et al., 2016). Measurement of hemoglobin levels in this study was carried out before and after administration of blood supplement tablets (Limbong & Koro, 2022). On average, young women in both the intermittent and routine groups still had hemoglobin levels below normal before being given blood supplement tablets. This is influenced by the age, gender and nutritional status of the female adolescent (Jacobus et al., 2016). As a person gets older, a person will increasingly experience a physiological decline in all body organs, including a decline in the spinal cord which produces red blood cells. Adolescence occurs when children grow towards maturity and become adults. Physical, biological and psychological changes occur during adolescence. If there is an imbalance between meeting nutritional intake and needs, including iron, this can be the cause of anemia in adolescents. Unbalanced nutritional intake can result in nutritional problems, both under nutrition and excess nutrition (Nuradhiani et al., 2017). The average age of teenagers in this study shows that in late adolescence the body has prepared for maturity towards a more complex adulthood so that it requires nutritional intake that is balanced with the menstrual process that occurs every month and the daily activities of young women. Blood supplement tablets are supplements given to individuals which are useful for increasing hemoglobin levels in the blood. As in this study, giving blood supplement tablets to the group of young women was proven to increase hemoglobin levels by 0.92 respectively in the intermittent group and 1.20 in the routine group. This means that both groups experienced an increase in hemoglobin levels whether they were given blood supplement tablets intermittently or regularly. Previous research results stated that the increase in hemoglobin levels could be increased by 1.5 by administering blood supplement tablets (Yuanti et al., 2020). This research shows that the increase in hemoglobin levels in

Table 1. Description of respondents' characteristics based on age, height, weight, upper arm circumference, and menarche (n_1=25; n_2=25)

Variable	Group	Mean	Median	Std.Dev	Variance	Min-Max
Age	Intermittent	16,80	17	0,71	0,5	16-18
	Routine	17,24	17	1,09	1,19	15-19
Height	Intermittent	153,68	155	5,33	28,39	144-164
	Routine	153,56	155	4,76	22,67	144-165
Weight	Intermittent	48,88	46	8,83	77,94	39-68
	Routine	48,12	47	7,95	63,19	38-75
Upper arm circumference	Intermittent	24,12	23	2,72	7,40	21-29,5
	Routine	23,78	24	2,50	6,23	19,5-31,5
Menarche	Intermittent	12,12	12	1,27	1,61	10-15
	Routine	12,4	12	1,04	1,08	11-15

Table 2. Overview of Hemoglobin levels of respondents before and after based on intermittent and routine groups (n_1=25; n_2=25)

Variable	Group	Mean	Median	Std.Dev	Variance	Min-Max
Hemoglobin Levels before intervention	Intermittent	11,07	11,3	0,85	0,72	8,1-11,9
	Routine	11,08	11,2	0,62	0,38	9,4-11,9
Hemoglobin Levels after intervention	Intermittent	11,98	12	1,01	1,02	10,6-14,9
	Routine	12,28	12	1,30	1,68	9,6-15

the group given blood supplement tablets regularly was higher than those given intermittently. However, this research also found that there was no difference in the increase in hemoglobin in the group given blood supplement tablets either intermittently or regularly. This means that giving blood supplement tablets can be given intermittently or regularly, both of which can increase hemoglobin levels. This is supported by previous research which states that whether given regularly or intermittently, blood supplement tablets are equally effective in increasing hemoglobin levels in the blood and reducing the incidence of anemia [17]. Consideration of giving blood supplement tablets can be considered when side effects appear. In line with previous research, it is stated that giving blood supplement tablets can cause unpleasant side effects, namely stomach discomfort, nausea, vomiting, diarrhea and constipation (J. Finkelstein et al., 2018). In contrast, intermittent administration of blood supplement tablets is said to cause fewer side effects (Fernández-Gaxiola & De-Regil, 2019). Similarly, in this study, although the incidence of side effects was very small in both groups, the results of brief interviews with researchers showed that the routine group experienced more serious side effects in the form of gastrointestinal disorders accompanied by dizziness. Gastrointestinal disorders such as constipation and black stools without other side effects occurred in the intermittent group.

Conclusion

The results of the study showed that there was no difference in the increase in hemoglobin in the group given iron supplementation either intermittently or regularly. This means that giving iron supplementation can be given intermittently or regularly and can both increase hemoglobin levels. The consideration of giving iron supplementation can be taken in the emergence of side effects. Adolescent girls with anemia can be given

iron supplementation intermittently to avoid possible side effects and reduce boredom when consuming iron supplementation.

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In adolescents, anemia can cause growth disorders, decreased physical fitness (easily tired, lethargic, dizzy, easily sleepy) and an increased risk of infection. In addition to adversely affecting physical growth and health status, anemia also affects cognitive development, hindering achievement in school as well as future work productivity. Adolescents with anemia who experience pregnancy can increase the risk of maternal and infant death, childbirth complications giving birth to babies with low birth weight, and increase the risk of stunting in children (Anggraeni, 2021), (Al-Jermmy et al., 2022).

The World Health Organization monitors several programs to help reduce the prevalence of anemia through treatment and prevention. The program established by WHO aims to increase dietary diversity, improve infant feeding practices, and increase the availability of micronutrient intake through fortification or supplementation with iron, folic acid, and other vitamins and minerals (world health organization, 2022). In addition, at the 65th *World Health Assembly* (WHA), WHO also agreed on action plans and global targets for maternal, infant, and child nutrition, with a commitment to halve (50%) the prevalence of anemia in WUS by 2025 (Kementerian Kesehatan RI, 2018).

The government through the Regulation of the Minister of Health of the Republic of Indonesia Number 88 of 2014 has regulated the standard of giving iron supplementation for women of childbearing age and pregnant women. Furthermore, the Minister of Health was followed up with the Circular Letter of the Director General of Kesmas Number HK.03.03/V/0595/2016 concerning the provision of iron supplementation to adolescent girls and women of childbearing age. One of the intensification strategies for prevention and control of anemia in adolescent girls and WUS is to prioritize the provision of iron supplementation through school institution (Kementerian Kesehatan RI, 2018).

Research by Permatasari, *et al* (2018) showed that the prevalence of anemia in adolescent girls decreased after being given a iron supplementation intervention for 4 months. The prevalence of anemia before

the intervention was 20.9% of 172 subjects decreased to 15.7% after the intervention i.e. decreased by 5.2% (Permatasari et al., 2018). Other studies also showed that the effect of iron supplementation administration on the increase in hemoglobin in adolescent girls who have anemia is with an average increase of 1.550 with p value = 0.001 (Yuanti et al., 2020). This suggests that iron supplementation may increase hemoglobin levels in adolescent girls.

Routine administration of iron supplementation or given every day is associated with side effects that appear namely the presence of mild gastrointestinal symptoms (eg. abdominal pain, vomiting, nausea, diarrhea, constipation). Such side effects are associated with decreased adherence to iron supplementation and may limit the effectiveness of interventions (J. L. Finkelstein et al., 2018). Based on a systematic review it was found that showed that women who received intermittent supplementation with iron alone, or in combination with folic acid or other nutrients, were less likely to develop anemia or iron deficiency than women who did not receive iron supplements or plasebo. In addition, the findings suggest that intermittent supplementation is as effective as daily supplementation in reducing the prevalence of anemia and increasing hemoglobin concentration, with fewer side effects (Fernández-Gaxiola & De-Regil, 2019).

Based on the description of the problem above, the research question in this study is "is there a difference in the provision of iron supplementation in adolescent girls with intermittent anemia compared to routine administration of elevated hemoglobin levels?"

Method

This study used a quasi-experimental research design with control group. The intervention given in this study was the administration of iron supplementation in adolescent girls by measuring hemoglobin levels

before and after the intervention was given.

Research instruments that were used in this study include questionnaires on respondent characteristics, hemoglobin measuring devices, the sheet for monitoring the consumption of iron supplementation. The population in this study was adolescent girls. The sample is determined by stratified random sampling technique. The inclusion criteria in sampling are adolescent girls who experience anemia in the mild, moderate and severe categories. Data collection will be carried out in the Working Area of Puskesmas Kedungwuni 1, Pekalongan Regency with the highest anemia prevalence data in Pekalongan Regency, which is 36.97% (Dinas Kesehatan Kabupaten Pekalongan, 2022). The exclusion criteria are adolescent girls who are not willing to be respondents and cannot consume iron supplement due to allergies or other factors. The sample size is calculated based on the mean and standard deviation approaches (Permatasari et al., 2018).

In the initial screening examination, adolescent girls were checked for hemoglobin levels. After knowing the condition of their hemoglobin, adolescent girls who might fall into the category of anemia and were willing to become respondents (given informed consent). The results of the hemoglobin examination become the initial/pre-intervention hemoglobin examination data. Researchers divided respondents into 2 groups, namely the intervention group (25 respondents) and the control group (25 respondents). Next, researchers gave treatment to the intervention group by giving iron supplementation to adolescent girls for intermittent consumption, namely adolescent girls consume iron supplementation 3 times for 1 week with no consecutive drink every day (eg: iron supplementation consumed on Monday, Wednesday, Friday or Tuesday, Thursday, Saturday) (Fernández-Gaxiola & De-Regil, 2019). In the control group, the intervention was given by giving iron supplementation to adolescent girls with anemia to take iron supplementation daily on a regular basis (J. Finkelstein et al., 2018). This inter-

vention is given for 8 weeks or 2 months. The provision of interventions was monitored using a monitoring checklist of iron supplementation consumption and assisted by the next of kin to ensure that iron supplementation has been consumed by adolescent girls. Researchers also helped to remind the iron supplementation consumption schedule through online reminders via short message / WA (*WhatsApp*) with confirmation of answers from respondents. After 8 weeks, researchers conducted hemoglobin tests on respondents to obtain final data / post intervention.

Data analysis was carried out after the data completed. Data processing was carried out with the aim that the information produced in this study can be ascertained to be correct. Data processing carried out by researchers goes through the following stages Editing (checking the completeness of the data), Coding (giving code to the data that has been collected), Processing (entering data from coding done in the previous stage into the computer program), Cleaning (checking the data that has been entered into the computer program and ensuring that all data entered was correct (Amruddin et al., 2022).

After the data was processed, then the data was analyzed univariately and bivariately. Univariate analysis in this study was characteristic of respondents. Age variables include types of numerical data to be analyzed by calculating the mean value, maximum value and minimum value. Other variables of categorical data type was analyzed by calculating the frequency and percentage of variables. Bivariate analysis was performed to see the effect of iron supplementation in each group. The statistical test used a paired sample t-test. After that, proceed with an independent sample t-test to analyze the differences between the two different groups.

Result and Discussion

Univariate analysis describes the char-acteristics of research respondents based on demographic data related to the dependent variable of the study. The following table 1 is the result of univariate analysis of this study.

The average age in the routine group was older than in the intermittent group, but the age range of the routine group was more at 15-19 years compared to the intermittent group of 16-18 years. Height in both groups had almost the same average value, namely at 153.68 and 153.56. Similarly, the weight variable has almost the same average value of 48.88 and 48.12. Similar to the age variable, the upper arm circumference of the routine group had a greater range of 19.5-31.5 cm than in the intermittent group. However, the average circumference of the upper arm was higher in the intermittent group than in the routine group. The average age of menarche in both groups was around 12 years with the youngest menarche being 10 years old in the intermittent group and the oldest being 15 years old in both groups.

In addition to describing the characteristics of respondents, univariate analysis also described Hemoglobin levels before and after blood tablets were given in both groups. The average Hemoglobin levels before being given blood-added tablets were almost the same in both groups (Purnama Hamudi et al., 2022). The average Hemoglobin levels after being given blood-added tablets in the routine group were higher than intermittent rice, but both groups experienced an increase in Hemoglobin levels after being given blood-added tablets. The increase in Hemoglobin levels in both groups also occurred at minimal and maximum values. The results of univariate analysis of Hemoglobin levels in both groups are presented in Table 2 below.

Hemoglobin is an erythrocyte tetrameric protein that binds to non-protein molecules, namely the iron porphyrin compound called heme (Khoeroh et al., 2024). Hemoglobin has two important transport functions in the human body, namely transporting oxygen to tissues and transporting carbon dioxide and protons from peripheral

tissues to respiratory organs. The amount of hemoglobin in erythrocytes is low, so the ability of erythrocytes to carry oxygen to all body tissues will also decrease and the body will become deficient in oxygen. This will cause anemia (Gunadi et al., 2016). Measurement of hemoglobin levels in this study was carried out before and after administration of blood supplement tablets (Limbong & Koro, 2022). On average, young women in both the intermittent and routine groups still had hemoglobin levels below normal before being given blood supplement tablets. This is influenced by the age, gender and nutritional status of the female adolescent (Jacobus et al., 2016). As a person gets older, a person will increasingly experience a physiological decline in all body organs, including a decline in the spinal cord which produces red blood cells. Adolescence occurs when children grow towards maturity and become adults. Physical, biological and psychological changes occur during adolescence. If there is an imbalance between meeting nutritional intake and needs, including iron, this can be the cause of anemia in adolescents. Unbalanced nutritional intake can result in nutritional problems, both under nutrition and excess nutrition (Nuradhiani et al., 2017). The average age of teenagers in this study shows that in late adolescence the body has prepared for maturity towards a more complex adulthood so that it requires nutritional intake that is balanced with the menstrual process that occurs every month and the daily activities of young women. Blood supplement tablets are supplements given to individuals which are useful for increasing hemoglobin levels in the blood. As in this study, giving blood supplement tablets to the group of young women was proven to increase hemoglobin levels by 0.92 respectively in the intermittent group and 1.20 in the routine group. This means that both groups experienced an increase in hemoglobin levels whether they were given blood supplement tablets intermittently or regularly. Previous research results stated that the increase in hemoglobin levels could be increased by 1.5 by administering blood supplement tablets (Yuanti et al., 2020). This research shows that the increase in hemoglobin levels in

Table 1. Description of respondents' characteristics based on age, height, weight, upper arm circumference, and menarche (n_1=25; n_2=25)

Variable	Group	Mean	Median	Std.Dev	Variance	Min-Max
Age	Intermittent	16,80	17	0,71	0,5	16-18
	Routine	17,24	17	1,09	1,19	15-19
Height	Intermittent	153,68	155	5,33	28,39	144-164
	Routine	153,56	155	4,76	22,67	144-165
Weight	Intermittent	48,88	46	8,83	77,94	39-68
	Routine	48,12	47	7,95	63,19	38-75
Upper arm circumference	Intermittent	24,12	23	2,72	7,40	21-29,5
	Routine	23,78	24	2,50	6,23	19,5-31,5
Menarche	Intermittent	12,12	12	1,27	1,61	10-15
	Routine	12,4	12	1,04	1,08	11-15

Table 2. Overview of Hemoglobin levels of respondents before and after based on intermittent and routine groups (n_1=25; n_2=25)

Variable	Group	Mean	Median	Std.Dev	Variance	Min-Max
Hemoglobin Levels before intervention	Intermittent	11,07	11,3	0,85	0,72	8,1-11,9
	Routine	11,08	11,2	0,62	0,38	9,4-11,9
Hemoglobin Levels after intervention	Intermittent	11,98	12	1,01	1,02	10,6-14,9
	Routine	12,28	12	1,30	1,68	9,6-15

the group given blood supplement tablets regularly was higher than those given intermittently. However, this research also found that there was no difference in the increase in hemoglobin in the group given blood supplement tablets either intermittently or regularly. This means that giving blood supplement tablets can be given intermittently or regularly, both of which can increase hemoglobin levels. This is supported by previous research which states that whether given regularly or intermittently, blood supplement tablets are equally effective in increasing hemoglobin levels in the blood and reducing the incidence of anemia [17]. Consideration of giving blood supplement tablets can be considered when side effects appear. In line with previous research, it is stated that giving blood supplement tablets can cause unpleasant side effects, namely stomach discomfort, nausea, vomiting, diarrhea and constipation (J. Finkelstein et al., 2018). In contrast, intermittent administration of blood supplement tablets is said to cause fewer side effects (Fernández-Gaxiola & De-Regil, 2019). Similarly, in this study, although the incidence of side effects was very small in both groups, the results of brief interviews with researchers showed that the routine group experienced more serious side effects in the form of gastrointestinal disorders accompanied by dizziness. Gastrointestinal disorders such as constipation and black stools without other side effects occurred in the intermittent group.

Conclusion

The results of the study showed that there was no difference in the increase in hemoglobin in the group given iron supplementation either intermittently or regularly. This means that giving iron supplementation can be given intermittently or regularly and can both increase hemoglobin levels. The consideration of giving iron supplementation can be taken in the emergence of side effects. Adolescent girls with anemia can be given iron supplementation intermittently to avoid possible side effects and reduce boredom when consuming iron supplementation.

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Effect of Murottal Al-Quran Therapy on Neuromuscular Maturity of Premature Babies

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Abstract

Premature babies are at risk of dying 70 times higher than normal birth babies because their organ systems are not fully mature. Murottal Al Quran is a form of non-medical therapy that uses sensory stimuli. The purpose of this study was to determine the effect of murottal Al-Qur'an therapy on neuromuscular maturity of preterm infants. The research design used a quasi-experimental study with 20 babies in the intervention group and 20 babies in the control group as respondents. The method of collecting data is by listening to the murottal Al Quran for 30 minutes in 21 days. The results of the analysis state that there is an effect of giving Murottal Al-Quran therapy on Neuromuscular Maturity of Premature Babies.

Keywords

premature, neuromuscular maturity, new ballard score

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Introduction

Premature babies are babies born in the gestational age range of 28 - 37 weeks or babies born not yet full term. They are at risk of dying 70 times higher than normal born babies. Every year, an estimated 15 million babies are born prematurely (before 37 full weeks of pregnancy), and this number continue to increase (Crump et al., 2013).

Complications of preterm birth are the leading cause of death in children under 5 years of age, causing approximately 1 million deaths in 2015. Three-quarters of these deaths could be prevented with current, cost- effective interventions. In 184 countries, preterm birth rates range from 5% to 18% of babies born. (WHO, 2018)

The high morbidity and mortality in premature babies is caused by difficulties in adapting to life outside the womb because their organ systems are not fully mature. (Aita et al., 2017) For example, the lungs in the respiratory system, the heart in the circulatory system (heart), the intestines in the digestive and absorption system, and the brain in the central nervous system. Care for premature babies is to help them adapt to life outside the womb. (Myrhaug et al., 2020) More than three-quarters of premature babies can be saved with appropriate and cost-effective care, such as essential care during labor and in the postnatal period for each mother and baby, administration of antenatal steroid injections (given to pregnant women who risk of experiencing prematurity (WHO, 2018)

Murottal Al Quran Therapy is a form of complementary therapy using sensory stimulation by chanting or listening to the Holy Qur'an (Salsabila & Yanti, 2022). This therapy is included in music therapy which has been carried out by several researchers and is able to have the effect of reducing pain and stress, helping sleep quality more effectively and increasing the release of endorphins which make you feel calm and comfortable. (Rilla et al., 2014)

Apart from that, parents can easily do Al-Quran murottal therapy to help improve the growth and development process of babies and toddlers. The proportion of neonatal deaths due to prematurity according to WHO was 14 percent in 2000, increasing to 15 percent in 2001-2005 and 16 percent in 2006-2008, and continued to increase to 17 percent in 2009-2011 (Brady E. Hamilton et al., 2013). Meanwhile, in 2010 the number of neonatal deaths due to prematurity was 32,342 out of 73,404 neonatal deaths.

The Neonatal Mortality Rate (AKN) in the Southeast Asia region in 2017 was 21.3 per 1000 live births (KH). Data obtained from the results of the 2017 Indonesian Demographic and Health Survey (SDKI) shows that AKN is 15 per 1000 live births (Rostina et al., 2022). Meanwhile, perinatal mortality itself is a measure of a country's ability to provide quality and comprehensive health services. Indonesia has an incidence rate. (WHO, 2018) One of the causes of high perinatal deaths is caused by premature birth. Premature birth is an important problem of AKN. The premature birth rate in Bekasi City is 30.3% and 70% of the high number of perinatal deaths is caused by premature birth. Premature babies have a 9.31 percent greater risk of dying compared to those born at term. (Rahayu, n.d.) Non-pharmacological therapy along with pharmacological therapy has now also been widely studied. One of the non-pharmacological therapies is listening to murottal Al- Quran or classical music (Permana et al., 2021). Several studies show that murottal therapy can reduce pain, reduce nervous tension, activate natural endorphins, increase feelings of calm and divert attention from fear, anxiety and tension. (Labor et al., n.d.)

Various stimulation done F o r increasing neuromuscular maturity in premature babies to reduce the risk of morbidity and death (Majella Livingston & Hm, 2018). One non- pharmacological therapy that can be used is murotal therapy. Murotal therapy is part of music therapy which can improve neuromuscular maturity in

premature babies (Ningsih & Rofiatun Rosida, 2023). Previous research results show that murotal therapy can reduce pain, reduce nervous tension, activate natural endorphins, increase feelings of calm and divert attention from fear, anxiety and tension. Other research also shows that murotal therapy can have the same tone as brain vibrations, thereby stimulating the brain to work more optimally. There is also a significant reduction in pulse rate with Al-Quran murottal therapy in LBW babies. Stimulation using the Ballard method in newborns can actually help neuromuscular maturity. The level of maturity of the function of the neonate's organ systems is a requirement for adapting to life outside the womb. The Ballard Score is a set of procedures developed by Dr. Jeanne L Ballard to determine gestational age through neuromuscular and physical assessment of the newborn. (Lordier et al., 2019)

This study aims to assess the effectiveness of applying murotal therapy to increase the physical maturity of premature babies as assessed by the Ballard score so that It is hoped that the risk of morbidity and death in premature babies can be reduced. The specific aim of the success of this research is to determine the effect of Al-Quran murottal therapy on the physical maturity of premature babies.

Method

This research uses a quasi- experimental design approachnon- randomized control group pretest- posttest design. Sampling using techniques purposive sampling. The number of samples in this study was 40 premature babies consisting of 20 experimental group babies and 20 control group babies. The inclusion criteria for this study were premature babies with good hearing function with a gestational age of 28-36 weeks from Muslim families and the family was willing to participate in this research by signing a letter of informed consent.

The data collection technique begins with identifying and screening each potential respondent who has the potential to become a sample. If the respondent meets the inclusion criteria, then the research team offered people's willingness respondent's age. Then the parents of respondents who were willing and agreed to participate in the research were given an informed consent sheet to read, understand and sign. Determining the respondent group (intervention or control) by drawing lots simple. The intervention group was given standard care and Murottal Al Quran while the control group received standard hospital care without murottal Al Quran.

Carry out baseline measurements (T0) for the intervention and control groups. Respondents underwent a hearing examination by providing sound stimulation and seeing the baby's response to the sound. The Murottal Al-Quran intervention was given according to the protocol that had been created for the intervention group. Listening to Al Quran murottals at 09.00-12.00 WIB in the Perinatology room. Each baby is listened to the murottal of Al-Quran Surah Al Fatihah 7x and Morning Dhikr in total duration is 30 minutes. The loudspeakers are inserted into each incubator and not through a mass sound source. Then the measurement of neuromuscular maturity with the New Ballard Score in the intervention group was carried out every 5 days after the intervention was given.

Result and Discussion

The research results can be described in the following table 1.

The results of bivariate analysis using the T- Independent Test stated that there was a significant difference between the Ballard score between the intervention group and the control group with a ρ value (0.000) < α (0.05). Based on these results, Ho is rejected, which means that there is an influence of providing Al-Quran murottal therapy on the neuromuscular maturity of prematu-

Table 1. Responden Demographic Data

Category Gender	Research Experiment	Group Control
a. Man	9 (45%)	16 (80%)
b. Woman	11 (55%)	4 (20%)
Gestation period		
a. 28 – 32 weeks	7 (35%)	10 (50%)
b. 33 – 37 weeks	13 (65%)	10 (50%)
Mother's Age		
a. < 20 years	1 (5%)	0 (0%)
b. 20 – 35 years	19 (95%)	12 (60%)
c. > 35 years	0 (0%)	8 (40%)
Parity		
a. Primipara	6 (30%)	4 (20%)
b. Multiparous	11 (55%)	15 (75%)
c. Grande multiparous	3 (15%)	1 (5%)
Types of Childbirth		
a. Vaginal	16 (80%)	12 (60%)
b. Abdominal	4 (20%)	8 (40%)

Table 2. Bivariate Analysis Result

Group	Time	Mean	Std. Deviation	Std. Error Mean	Correlation	P Value
Experiment	Before	18,65	2,996	0,670	0,847	0,000
	After	22,25	2,359	0,528		
Control	Before	16,95	2,350	0,526	0,932	0,000
	After	19,95	2,762	0,618		

re babies in Bekasi City.

Music has a rhythm that can influence the rhythm of human heart rate and respiratory movements. If the musical sound received is a calming and regular sound repeatedly, the music will provide impulses to the hypothalamus to respond to the adrenal medulla gland to suppress the release of the hormones epinephrine and norepinephrine or the release of catecholamines into the blood vessels to be reduced. As a result, the concentration of catecholamines in plasma becomes low, so the heart rate decreases. (Ina, 2019)

Alternative and complementary therapy is a form of therapy that is not standard in a patient's treatment plan. However, this therapy is often chosen by many people as a complement to the pharmacological therapy they have received. Therapy Non-pharmacological therapy that has been widely used is heat therapy, massage, music and touch. The center for complementary therapies has listed 10 commonly used therapies such as diet, deep breathing techniques, yoga and other exercises, chiropractic, meditation, special diets, relaxation and integrated imagery. (Sari, 2013)

Meanwhile, music therapy is included in sensory therapy which has a calming effect on tension and distracts attention so as not to feel pain. Some conditions that allow for music therapy are medical healing, pain due to procedural processes, after surgery,

wound debridement, labor pain, cancer patients, palliative care and neuropathic pain. Music therapy is a sensory therapy that has been practiced by many cultures for thousands of years.

Music therapy can include listening to music, writing music lyrics or singing. But what is most often done is listening to music therapy via headphones or loudspeakers. Music therapy is sound stimulation consisting of melody, rhythm, harmony, form and style which is organized in such a way as to create music that is beneficial for physical and mental health. (Persalinan et al., n.d.)

The Koran is the revelation of Allah Subhanahu wata'ala which was revealed to humans through the Prophet Muhammad sallallaahu 'alaihi wasallam as a guide to human life. The Koran is the holy book of Muslims which is believed to be true and when read and practiced, you will get rewards in return. The Koran is also referred to as Ash Syifa, which means a healer for physical and psychological illnesses. The art of reading the Koran using correct recitation and a special rhythm is also called Tilawatil Koran. Meanwhile, the person who reads it is also called Qori' or Qori'ah. Murottal means in Rathu As-Syaghiri's language, namely a good plant, ripe and blooming. Meanwhile, according to the term, it is a calm reading, the letters are written correctly or according to the meaning and every meaning is absorbed. (Putriana & Aliyanto, 2018) According to Anwar (2008) Murottal is a way to preserve the Al Quran by recording it while still paying attention to the laws of reading, the makhroj of letters and paying attention to the correct stop signs.

Murottal is a collection of readings of Al-Quran verses which aims to preserve them by recording the readings.

(Meyrani & Hartati, 2013), mention that therapy with reading the Koran is a stimulant Al-Qur'an murottal can be used as a new alternative therapy as a relaxation therapy, even better than other audio therapies because the Al-Qur'an stimulant can produce delta waves. Delta waves are waves that have a large amplitude and a low frequency below 4 Hz, produced by the brain when people are asleep or in the resting phase for the body and mind (Prasekolah et al., 2009). The results of research conducted by (Qadiy, 1984) regarding the influence of the Al-Qur'an on the body's organs, succeeded in proving that just by listening to the reading of the verses of the Al-Qur'an, a Muslim, for those who understand Arabic or not, can feel physiological changes. Very large.

One of the benefits of Al-Quran reading therapy is that it can soothe the soul (QS Al A'raf: 203-204) and be a cure for pain because it can reduce stress hormones, activate natural endorphin hormones, increase feelings of relaxation and divert attention from fear, anxiety and tension. . Improves the body's chemical system thereby lowering blood pressure, slowing breathing, heart rate, pulse and brain wave activity. (Annisa, 2017)

Conclusion

The results of the study stated that there was a significant difference between the Ballard score between the intervention group and the control group with a ρ value (0.000) < α (0.05) means that there is an influence of providing Al-Quran murottal therapy on Muslim babies who are hospitalized with emergency conditions.

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The Effectiveness of Murottal on the Anxiety Level of Pregnant Women Using HARS (Hamilton Anxiety Rating Scale)

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Abstract

The recitation of the Qur'an (Murottal Al-Qur'an) can be a solution for anxious souls, especially for pregnant women. The anxiety levels of pregnant women can be measured using the Hamilton Anxiety Rating Scale (HARS). The research objective was to determine the effectiveness of Murottal on the anxiety levels of pregnant women using HARS at the Kassi-Kassi Community Health Center. The research method involved analytical observational combined with a quasi-experimental research approach and a series of Pre-test and Post-test to determine the effectiveness of Murottal on the anxiety levels of pregnant women using HARS at the Kassi-Kassi Community Health Center. Results showed a significant effectiveness of Quranic Murottal therapy on the anxiety levels experienced by pregnant women at the Kassi-Kassi Community Health Center with a p-value of 0.000. Conclusion: Quranic Murottal therapy can influence the reduction of anxiety levels among pregnant women at the Kassi-Kassi Community Health Center.

Keywords

murottal, anxiety, pregnant women, HARS

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Introduction

Pregnancy is an eagerly awaited event for almost every married couple. Pregnancy is a normal and natural process characterized by the growth and development of the intrauterine fetus, beginning from conception until childbirth (Longo, 2018). Pregnancy brings about physical, psychological, and stress-related changes for women. In the early stages of pregnancy, mothers already experience anxiety and worry due to a lack of knowledge and support from family, society, and the environment, as well as existing maternal illnesses (Atif et al., 2020). If left unchecked, this situation can lead to an increase in morbidity and mortality rates among pregnant women. Anxiety escalates as childbirth approaches, especially in the third trimester. In Indonesia, around 28.7% of 107,000,000 pregnant women experience anxiety, and in Java Island, approximately 52.3% or 355,873 out of 679,765 pregnant women in the third trimester experience anxiety in facing childbirth. (Abdullah et al., 2021; Rahayu Widiarti & Yulviana, 2022)

Anxiety disorder is one of the most commonly encountered psychiatric disorders. According to The National Comorbidity Study report, one in four individuals is diagnosed with an anxiety disorder (Asp et al., 2020). Anxiety disorders also occur more frequently in females (30.5%) compared to males (19.2%). Anxiety is an unpleasant feeling arising as a manifestation of various emotional states during times of emotional pressure (frustration) and internal conflicts. Anxiety in pregnant women can arise, especially during the third trimester until childbirth. During this period, pregnant women may feel anxious about various aspects such as the normalcy of the baby's birth, the pain they will experience, and so on. As the delivery date approaches, especially in first pregnancies, it is common for feelings of anxiety or fear to arise due to the new experience of pregnancy. However, anxiety will have negative impacts on pregnant women from pregnancy to childbirth, such as fetal restlessness hindering growth, weakening uterine muscle contractions, among others. These impacts can endanger both the mother and the fetus. (Sari et al., 2023)

In the Quran, many verses related to the human psyche are found, which theoretically can serve as a basis for psychotherapeutic reference to address anxiety (Eric & Rothman, 2019). The Quran offers solutions for anxious souls to find tranquility, both through recitation and writing. Various Quranic verses also provide guidance on how to face life's problems without anxiety. Religious therapy through Quranic recitation works on the brain, stimulating the production of chemicals called neuropeptides, which provide feedback in the form of relaxation or comfort. (Kamila, 2020; Meiyuni, 2020)

Based on research conducted by Wiulin Setiowati in 2020, it was proven that the highest level of anxiety among respondents in the third trimester of pregnancy before being given Quranic recitation therapy was severe anxiety, with 14 people (70%) (Indrawati et al., 2022). The highest level of anxiety among respondents in the third trimester of pregnancy after being given Quranic recitation therapy was moderate anxiety, with 9 people (45%). From the statistical test results, it was found that Quranic recitation therapy has an effect on the level of anxiety in pregnant women in the third trimester with a p-value of 0.000. The conclusion drawn was that there is an effect of providing Quranic recitation therapy, specifically Surah Maryam, on the level of anxiety in pregnant women in the third trimester in the working area of the Pagatan Health Center. (Iryani et al., 2023; Setiowati & Asnita, 2020)

This serves as a basis for researchers to analyze the effectiveness of Quranic verses in addressing anxiety issues experienced by primigravida and multigravida pregnant women before facing childbirth at the Kassi-Kassi Health Center.

Method

The research design used in this study is an observational analytical design with a Quasi-Experimental research approach. This research was conducted using a Pre-test and Post-test method to determine the Effectiveness of Quranic Recitation on the Anxiety Level of Pregnant Women Using the HARS (Hamilton Anxiety Rating Scale) at the Kassi-Kassi Health Center. After the pre-test, the researcher provided instructions to the mothers regarding the routine of Quranic recitation therapy, free to choose any Surah. After that, a post-test was conducted to measure the mothers' anxiety level again. The study was conducted at the Kassi-Kassi Health Center, Makassar, in November 2021. The population of this study is all third-trimester pregnant women at the Kassi-Kassi Health Center in Makassar. The sampling technique used is purposive sampling, which has met the inclusion and exclusion criteria, with a total sample of 25 people. In this study, data analysis uses the Wilcoxon signed-rank test.

Result and Discussion

The characteristics of respondents in this study based on the parity type of pregnant women at the Kassi-Kassi Health Center are as follows: Primigravida consists of 12 individuals (48%) and Multigravida consists of 13 individuals (52%) (Table 1). The distribution of anxiety level data before Quranic Recitation therapy for Pregnant Women at the Kassi-Kassi Health Center is as follows: Pregnant Women without anxiety (0%), Pregnant Women with Mild Anxiety: 11 individuals (44%), Pregnant Women with Moderate Anxiety: 12 individuals (48%), Pregnant Women with Severe Anxiety: 2 individuals (8%) (Table 2). Meanwhile, for the anxiety level after Quranic Recitation therapy, the data obtained are as follows: Pregnant Women without anxiety: 12 individuals (48%), Pregnant Women with Mild Anxiety: 11 individuals (48%), Pregnant Women with Moderate

Anxiety (0%), Pregnant Women with Severe Anxiety (0%) (Table 2).

Based on the bivariate analysis conducted, the researcher found that there is effectiveness of Quranic recitation therapy on the anxiety level of pregnant women at the Kassi-Kassi Health Center (Table 2). The results of the correlation test show a p-value of 0.000, which is smaller than the alpha of 5% or 0.05.

Based on the findings of this research, it was found that there is an influence in reducing the anxiety level before and after Quranic therapy. This is supported by the discussion in Wiulin's (2020) research on the effect of Quranic recitation of Surah Maryam on the anxiety level of third-trimester pregnant women, which also yielded similar results, indicating a significant influence. Wiulin's study focused specifically on Surah Maryam and had a smaller total sample size of 20 individuals, while this study did not limit to a specific surah, and the sample size was larger, consisting of 25 individuals. (Setiowati & Asnita, 2020)

The results of this research are in line with the theory that listening to the recitation of the Quran with proper tajweed (rules of Quranic recitation) brings tranquility to the soul. The recitation of the Quran physically contains elements of human voice, and the human voice is an incredible healing instrument and the most easily accessible tool. Sound can reduce stress hormones, activate natural endorphins, enhance relaxation, and divert attention from feelings of fear, anxiety, and tension, improving the body's chemical system to lower blood pressure and slow down respiration, heart rate, pulse, and brain wave activity. This indicates that Quranic recitation leads to a decrease in depression, sadness, and tranquility of the soul. This theory is also supported by research conducted by Asrul (2023) on the effectiveness of Quranic recitation therapy for anxiety, which found that listening to Quranic recitation is one of the alternatives that brings comfort and serves as a reminder. (Asrul, 2023; Dianti & Indrawijaya, 2021)

Table 1. Distribution of respondent characteristics based on parity type

Variable	Number of Respondents	Percentage (%)
Parity Type		
Primigravida	12	48.0
Multigravida	13	52.0
Total	25	100

Table 2. Bivariate Analysis Results of Quranic Recitation Therapy on the Anxiety Level of Pregnant Women

Anxiety	Before		After		P Value
	n	%	n	%	
No Anxiety	0	0	12	48.0	
Mild Anxiety	11	44.0	13	52.0	
Moderete Anxiety	12	48.0	0	0.0	0.000
Severe Anxiety	2	8.0	0	0.0	
Total	25	100	25	100	

The limitations of this study include the lack of division between sample and control groups. Additionally, there are several factors other than Quranic recitation therapy that can influence the anxiety level of pregnant women, but were not addressed in the research. For instance, the provision of information and knowledge prior to childbirth and the signs of anxiety experienced by pregnant women were not discussed. Spousal support can reduce anxiety, enabling third-trimester pregnant women to feel calm and mentally strong in facing childbirth. Specifically, factors influencing anxiety in pregnant women include decision-making, maternal age, family's ability and readiness, health, and history of previous childbirth. Therefore, variables such as age, psychological factors, level of knowledge, medical history, childbirth history, family support, and spiritual support may also play a role in the level of anxiety experienced by pregnant women. These variables could introduce bias into the research. (Anggraeni S, 2023; Hastanti et al., 2021; Krámská et al., 2023)

The advantage of this study lies in the use of a standardized questionnaire to measure the level of anxiety, ensuring more accurate data collection. Furthermore, the Quranic recitation therapy is not limited to specific chapters. This is based on the verse from Surah *Al-Isra'*:82 which states as follows.

ونُنَزِّلُ مِنَ القرآنِ ما هُوَ شِفَاءٌ ورَحمةٌ للمؤمنينَ ولا يزيدُ الظَّالِمِينَ إلا خَسارًا

"And We send down of the Qur'an that which is healing and mercy for the believers. And the Quran does not increase the wrongdoers except in loss." (Q.S *Al-Isra'* :82). (TafsirQ, 2024)

The term "syifa" (meaning healing or cure in Bahasa Indonesia) is used in the Qur'an instead of "dawa" (which means medicine) because its results are tangible, whereas medicine may or may not have an effect. (Syawal et al., 2022)

In the annals of Islamic history, the practice of using the Qur'an or specific verses from it in daily life dates back to the time of the Prophet, and it is said that such practices were indeed performed by the Prophet himself. According to the narration from '*Aisyah Radiyallahu'anha*, it is mentioned that the Prophet Muhammad (peace be upon him) would recite the *Mu'awwizat* (Surah *An-Nas* and *Al-Falaq*) upon himself when he fell ill nearing his demise. As his illness worsened, I [*Aisyah*] would recite these two surahs and rub them with his own hand, seeking blessings from them. (Fitriyan, 2021)

If practices like these existed during the time of the Prophet, where the Qur'an not only served as a guide for life but also as a form of treatment, then the Qur'an would be regarded as having a role beyond its capacity as a text. It would not be limited to specific verses but encompass the entire Qur'an. For example, semantically, Surah *Al-Fatihah* may not be directly related to illness, yet it is used for functions beyond its semantic function. Therefore, based on this theory, Quranic recitation therapy can be utilized as a core treatment, especially for anxiety in pregnant women. (Ainiyah, 2019)

Conclusion

After conducting a study on Quranic recitation therapy regarding the anxiety level of pregnant women at the Kassi-kassi health center, the researchers concluded that there is a correlation between recitation therapy and the anxiety level of pregnant women. This is evidenced by the reduction in anxiety levels before and after Quranic recitation therapy.

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Effectiveness of E-Health for Early Detection of Emergency in Pregnancy : A Systematic Review

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Abstract

Background: The rapid development of digital technology provides a fundamental new understanding of improving public health by utilizing digitalization, especially in health prevention and promotion. The aim of this systematic review is to determine the effect of E-Health for Early Detection of Emergencies in Pregnancy. Method: This research was conducted using a systematic review referring to the 2020 PRISMA checklist. The article search process used databases sourced from PubMed, Scopus, Cinahl and Science Direct, using keywords and inclusion and exclusion criteria. The literature search used several keywords, namely "digital technology in health", "digital services", and "digital public health" in 2012-2022. Results: In searching this journal, researchers found 5 (five) pieces of literature related to digital health services. The research results showed that various digital applications were used to provide health services such as m-health and digital healthcare for pregnant women based on Android which were used to provide pregnancy services, knowledge and attitudes towards weight gain guidelines, weight tracking. Conclusion : Medical applications make smartphones a useful tool in the practice of evidence-based medicine at the point of care, and can also play a very important role in patient education, disease self-management, and remote patient monitoring.

Keywords

application; early detection; emergency; pregnancy

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Introduction

The delivery of efficient and high-quality health services is a cornerstone of the global agenda to achieve universal health coverage. According to the World Health Organization (WHO), health service delivery is considered good when equitable access to a comprehensive range of high-quality health services is guaranteed within an integrated and person-centred continuum of services (WHO, 2010).

The rapid development of digital technology provides a fundamental new understanding of improving public health by utilizing digitalization, especially in health prevention and promotion (Wienert et al., 2022). In the last five years, the use of Information and Communication Technology (ICT) in Indonesia has shown rapid development. The most rapid development of ICT indicators can be seen in household internet use which will reach 86.54 percent in 2022 (Statistik, 2022).

The power of digital technology is critical to achieving universal health coverage, and digital technology is not the end goal; they are an important tool for improving health, keeping the world safe, and serving disadvantaged groups (Dempsey et al., 2020). Many software applications have been produced for healthcare professionals to facilitate evidence-based treatment practices at the point of care (Saleh et al., 2012). Digital technologies shape the way individuals and health systems interact to improve health and treat disease (Azzopardi-Muscat & Sørensen, 2019).

Method

The author refers to the 2020 Preferred Reporting Items for Systematic review and Meta-Analysis (PRISMA) checklist as a reference in conducting a systematic review.

Search Strategy

The article search process was carried out using research questions with the PICO (Population, Intervention, Comparison and Outcome) approach. The search used the keywords "digital technology in health", "digital services", "pregnant women" and "digital public health". Article searches using Google Scholar, Pubmed, Scopus and Science Direct for articles with quantitative and qualitative designs.

Inclusion and Exclusion Criteria

The expected results, the authors applied several inclusion and exclusion criteria. The inclusion criteria used were articles published from 5 literature publications in 2016-2022, fully accessible, containing applications for detecting emergencies in pregnant women. We excluded paid or restricted access articles, not in English and incomplete, for example articles that did not include an abstract.

Article Selection

The article selection process is carried out in 3 stages, NDI authors use the help of artificial intelligence Rayyan which is a free web-based online filtering tool to filter duplicates and delete articles based on irrelevant titles. In the second stage, the two MP authors carried out screening through Rayyan AI using a blind system so that the two reviewers did not know the results of the screening carried out by the other reviewer, the conflict was resolved by the third reviewer. After filtering duplicates and titles that are not relevant to the topic, the next stage is for the reviewer to review the abstracts that have passed the previous two stages together, then the articles that pass are selected for extraction. Article eligibility and the detailed screening process at each step are listed in the PRISMA diagram in Figure 1.

Data Synthesis

The authors report the results taking into account the interventions conducted that focused on postpartum women. The quite diverse research designs in the articles we collected caused quite high heterogenei-

ty so that meta-analysis was not possible. Therefore, the author summarizes the findings regarding the effectiveness of family planning counseling only in the form of a descriptive narrative and in a table containing a summary of the data that we can take from the selected articles. In this systematic review, the authors followed PRISMA guidelines without systematically assessing the
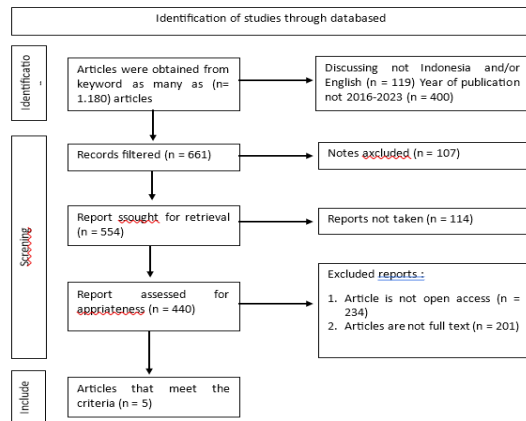

Figure 1. Article Search Diagram based on PRISMA

Result and Discussion

The search process using keywords in database sources on the internet produced a total of 1180 articles, the use of AI to detect duplicates including deleting systematic review articles that were netted in search engines produced 661 articles which were then filtered based on the title and abstract of the review. Based on the title and abstract review, 554 articles were excluded because they did not meet the research objectives and 440 articles met the requirements. Of the 440 articles, 234 articles were not fully accessible, 201 articles did not discuss postnatal family planning and 107 articles indicated inappropriate intervention, leaving 5 articles. The online data search strategy yielded 5 studies that were potentially relevant for research. Examining the abstracts, 5 studies were selected and the studies were reviewed as follows:

The current era is an era where there is unlimited exchange of resources, technological

innovation and information (Malik, 2019). The spread of these diseases depends on producing quality low-cost diagnostic equipment for disease screening, making vaccines and essential drugs available to everyone, developing good storage systems for drugs and vaccine reagents, and creating awareness about the disease and health through various media platforms. Recently, as the world is struggling to overcome this pandemic, every appropriate or innovative technology discovered or discovered is being disseminated to maximize health benefits and minimize loss of life (Technologies & Programme, 2019).

Based on (Saleh et al., 2012) explains that many medical applications for smartphones have been developed and are widely used by health professionals and patients. Medical applications make smartphones a useful tool in the practice of evidence-based medicine at the point of care, in addition to their use in mobile clinical communications (Hernández-Neuta et al., 2019). In addition, smartphones can also play a very important role in patient education, disease self-management, and remote patient monitoring. In research, Nawangsari et al., (2022), explains that a User Interface (UI) application prototype is the result of design. The prototype can be run as a web application as well as an android application (M. Prawira et al., 2019). This midwife salute prototype can be accessed at url: http://haibidann.com/http://haibidann.com/ and for the Android application it is available with haibidan.apk.

Access via a web browser with the URL will be displayed on the website display directly on the cloud hosting and access via the application installed on the Android device will be displayed on the application display. However, with web view and cloud hosting technology, accessing and using applications becomes easier because users only send and receive data from cloud hosting (Koehler et al., 2020). This application has been tested using the Blackbox software testing technique approach. The type of BlackBox technique used is Use Case Testing. This use case is based on UML modeling created previously. In the test case, user login is used (Nawangsari et al., 2022).

In research (Reddy et al., 2022) describes the M-HEALTH application which explains (1) the recommended pregnancy period for starting

Table 1. Characteristics of Research Articles that Meet Inclusion Criteria

Author, Title, Year	Method (Design/ Population/Sample/ variables)	Research Results and Conclusions
A Critical Look at the Global Digital Divide and the Role of Technology in Health Care. (Reddy et al., 2022)	Desain Penelitian : Kuantitatif uji coba metode campuran	Of the 80 participants enrolled, 69 (86%) completed the study with a median follow-up period of 6 months. Women in the MatHealth group had odds of 8.2 (P ¼ 0.19), 3.6 (P ¼ 0.14), and 6.4 (P ¼ 0.25), respectively, of having higher odds of knowing (1) recommended gestational period for initiating ANC, (2) recommended number of ANC visits, and (3) recommended timing and frequency of human immunodeficiency virus (HIV) testing compared with the routine care group.
Descriptive, Qualitative Study of Women Who Use Mobile Health Applications to Obtain Perinatal Health Information. (Connor et al., 2018)	Research design: qualitative descriptive.	mHealth Apps Are a Source of Support During Childbirth, mHealth Apps Are Functional Tools, and There Are Limitations to mHealth Apps. Participants felt supported when they used mHealth apps because the information was personalized and they could use the apps to connect with family and online communities. mHealth apps have limitations because women sometimes feel disconnected from the information they receive, some health care providers and families do not support their use, and and safety issues may be a concern.
Design of Mobile Digital Healthcare Application For Pregnant WomenBased on Android. (Nawangsari et al., 2022)	Research Design: The ADDIE framework model consists of five parts, namely analysis, design, development, implementation and evaluation.	A User Interface (UI) application prototype is the result of the design. The prototype can be run as a web application as well as an android application. This midwife salute prototype can be accessed at url: http://haibidann.com/http://haibidann.com/ and for the Android application it is available with haibidan.apk. Access via a web browser with the URL will be displayed on the website display directly on the cloud hosting and access via the application installed on the Android device will be displayed on the application display. However, with web view and cloud hosting technology, accessing and using applications becomes easier because users only send and receive data from cloud hosting. This application has been tested using the Blackbox software testing technique approach. The type of BlackBox technique used is Use Case Testing. This use case is based on UML modeling created previously. In the test case, user login is used. These results indicate that the user login function is running well according to design.
Development and pilot evaluation of a pregnancy-specific mobile health tool: a qualitative investigation of SmartMoms Canada. (Halili et al., 2018)	Research Design: qualitative descriptive.	Participants were technologically savvy and interacted with several mHealth tools before testing the SmartMoms Canada app. Six main themes emerged from the thematic analysis: knowledge of pregnancy-specific mHealth services, knowledge and attitudes towards weight gain guidelines, weight tracking, strengths of the app, criticism, and finally, future suggestions for the app.
Effects of Social Media and Mobile Health Apps on Pregnancy Care: Meta-Analysis. (Chan & Chen, 2019)	Research Design: Comprehensive literature study	fifteen randomized controlled trial studies published in and before June 2018 that met the inclusion criteria were included in the meta-analysis. The intervention was effective in improving maternal physical health including weight management, control of gestational diabetes mellitus, and asthma control with moderate to large effect sizes (d=0.72). A large effect size was also found in improving maternal mental health (d=0.84) and knowledge about pregnancy (d=0.80). Weight control interventions using wearable devices are more effective.

ANC, (2) the recommended number of ANC visits, and (3) the time and frequency of human visits. recommended immunodeficiency virus (HIV) testing compared with the routine care group. So all women in the MatHealth App group breastfed their babies exclusively, and had their babies tested for HIV at 6 weeks of age, compared with the routine care group. More than half of the women attended at least 4 prenatal visits in both groups.

Users search more for mHealth apps for pregnancy than other health condition-related apps, likely because women of childbearing age are comfortable with technology, experience significant physiological changes during pregnancy, and often seek information and guidance (Tseng, 2016). (Kim & Park, 2012) found that women who used an mHealth app journal versus a spiral notebook journal during pregnancy were more likely to carry the journal during perinatal visits and rated communication with their care providers higher during their pregnancy.

Research from (Wang et al., 2019) surveyed 535 women and showed that the most common reasons women used applications were to monitor fetal development (83%) and to obtain information about nutrition (26.2%) and antenatal care (23.9 %). Research (Lee & Moon, 2016) evaluated 47 apps identified by surveying 193 women and reported that most women decided to download the app after evaluating the content themselves (61.7%), and the most frequently cited benefit was convenience (35.8 %), while the most common weakness was lack of credibility (39%).

M-Health Apps Are Functional Tools, and There Are Limitations to mHealth Apps. Participants feel supported when they use the M-Health app because the information is personalized and they can use the app to connect with family and online communities. The M-Health app has limitations in that women sometimes feel disconnected from the information they receive, some health care providers and families do not support its use, and and security issues may be a concern (Frid et al., 2021).

Conclusion

This era is an era where there is widespread exchange of resources, technological innovation and information without national borders. Medical apps make smartphones a useful tool in the practice of evidence-based medicine at the point of care, and can also play an important role in patient education, disease self-management, and remote patient monitoring.

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Qualitative Study of Efforts to Prevent Fabrication and Falsification of Research Data of Yogyakarta Midwifery Students

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Abstract

Midwifery education requires midwifery students to be able to conduct research to develop the knowledge they have received and to support community service, but there are still many mistakes that occur in research such as fabrication, falsification and plagiarism. This research was conducted to find out the efforts made by the institution in preventing the fabrication and falsification of data for students of Diploma IV Midwifery Program in Yogyakarta. This research is a qualitative research using a narrative study approach. Data collection in this study used semi-structured interviews. This research was conducted with 8 informants including the Head of the Quality Assurance Agency of the Study Program, Head of Study Program, Quality Assurance Department, the Head of the Study Program, Thesis Coordinator and five lecturers of Diploma IV Midwifery Program in Yogyakarta. Efforts to prevent and overcome fabrication, falsification and plagiarism are carried out from the mentoring stage until the trial takes place, starting from the supervising lecturer, thesis coordinator, to the examining lecturer during the thesis examination, and there has been no written sanction given to students related to the fabrication and falsification of research data. Fabrication and falsification of data will result in wrong research so that it will create wrong knowledge as well.

Keywords

research; fabrication; falsification

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Introduction

Indonesia, as a developing country, in 2015 has committed to participating in the global development agenda within the framework of sustainable development goals (SDGs) (Rassanjani, 2018). One of the global development efforts that can be carried out is human development or the first pillar which consists of providing quality, evidence-based education developed through research (Didham et al 2018). The research aims for students to play a fundamental role in creating knowledge and supporting the development of analytical and creative capacities that enable the discovery of solutions to local and global problems in all areas of sustainable development (United Nations Educational, 2016).

Midwives as one of the spearheads of providing health services, especially midwifery, to the community have four roles in society, namely as educators, implementers, managers and researchers. Midwives as researchers must have investigative abilities in the health sector both independently and as a group (Aticeh et al., 2014).

Midwife education requires midwifery students to be able to conduct research to develop the knowledge they have received so far and to support community service (Fullerton et al., 2013). Research carried out by students on various problems developing in society can produce solutions or innovations that can provide direct benefits to the surrounding community (Steiner & Posch, 2018). So that student research is expected to be of good quality so that it can be applied in society (McCormick et al., 2013).

The problems in student research include the most frequent ethical writing problems, namely plagiarism, falsification and fabrication. (Deshmukh et al., 2017) explained that fabrication is making up research data or results and recording or reporting them. Falsification is manipulating materials, equipment, or research processes, changing or omitting data or results so that research is not accurately represented in research records, while plagiarism is the use of other people's ideas, processes, results, or words without citing existing sources.

According to Khadem-Rezaiyan & Dadgarmoghaddam (2017), one of the Health Universities in Iran, 37 percent of students do fabrication, 40 percent do falsification and 25 percent to 50 percent of students do plagiarism (Khadem-Rezaiyan & Dadgarmoghaddam, 2017) .

The educational institution where the research took place is one of the institutions in Yogyakarta which has a Diploma IV Midwifery Study Program (Adnani et al., 2022). The results of the preliminary study showed that the institution had a guidebook for writing a thesis, had clear sanctions for research errors, and had an ethics committee. However, based on research by (Prasetiono et al., 2014) perpetrators of plagiarism will receive severe punishment such as expulsion from school/university, but in reality detecting fabrication, falsification and plagiarism is very difficult so these penalties or sanctions have not been implemented optimally. Based on the background, the researcher is interested in knowing efforts to prevent fabrication and falsification of research data in the Diploma IV Midwifery Study Program in Yogyakarta (Zhao et al., 2016).

Method

This research uses a qualitative research method with a narrative study approach which aims to explain in depth a person's experience according to the sequence of events in the form of a chronology of events (Creswell, 2018). This research was conducted to determine efforts to prevent fabrication and falsification of research data for students of the Diploma IV Midwifery Study Program at one of the educational institutions in Yogyakarta. The subjects in this research were 8 informants, namely the Head of the Study Program Quality Assurance Agency, the Head of the Study Program, the Study

Program Thesis Coordinator and five Lecturers in the Diploma IV Midwifery Study Program in Yogyakarta. Determining research informants was carried out using a purposive sampling technique with the help of a gate keeper, namely the Admin of the Diploma IV Midwifery Study Program.

This research uses research instruments in the form of interview guides, audio records, and field notes. The data collection technique used was a semi-structured interview with an interview duration of between 30-60 minutes for each informant. The data analysis used in this research is thematic analysis.

Results and Discussion

The research carried out at one of the educational institutions in Yogyakarta was by interviewing eight informants who worked at the Yogyakarta Midwifery Diploma IV Study Program with a minimum education level of Masters and had been permanent lecturers for more than two years.

Table 1. Informant Characteristics

Informant	Position	Guiding experience
N1	Lecturer	14 years
N2	Head of Quality Assurance	5 years
N3	Lecturer	3 years
N4	Lecturer	9 years
N5	Lecturer	13 years old
N6	Lecturer	3 years
N7	Head of study program	13 years old
N8	Thesis coordinator	14 years

Midwifery student research has research procedures, based on the research guidebook established by the Institution, you can see the flow of submission and implementation of the final assignment as follows:
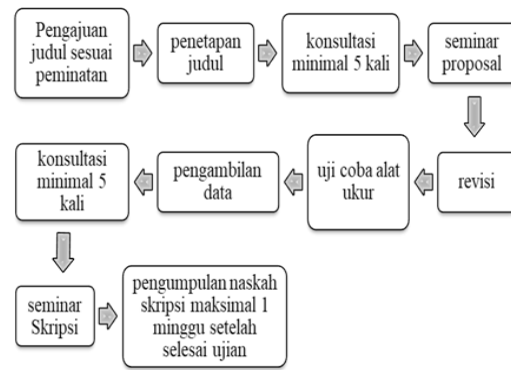

Figure 1. Flow of Submission and Implementation of Final Project Preparation

Based on this flow, after collecting the data, the data will be consulted with the supervisor.

"Process the results later. After that, start again with the results guidance with the two supervisors. When it's finished, then we will move forward with the results exam" (N2)

Falsification of research data, whether in part or in whole, is something that must be prevented among students (Chaddah, 2021). Four lecturers from the Diploma IV Midwifery Study Program said that efforts to prevent data falsification carried out by supervising lecturers were by checking student research instruments, as follows:

"In order to prevent falsification of research, there is a selection that we will open, sis, the questionnaire. Check the questionnaire" (N1)

"We check the data one by one in the questionnaires" (N4)

"We first crosscheck the questionnaire or the instruments he uses" (N5)

"From the consul, I have checked the results of the questionnaire, then for secondary data, look at the master table" (N6)

One lecturer stated that he would check the research data by contacting the midwife where the student's research took place, as stated by the Quality Assurer as follows:

"I checked with the midwife myself" (N2)

Inspecting research instruments is not

only done in this way, but there is another way to detect falsification of student research data, namely by looking at the suitability of the research questionnaire with the raw data obtained by students and processing the data. This is in accordance with the following statement:

"So we have to adjust the questionnaire, then the raw data, then the data processing and SPSS, usually those are the three things I check. (N3)

Examination of research instruments is not only carried out by the supervisor, but the Center for Research and Community Service also plays a role in carrying out the examination (Maba et al., 2018). All student data will be checked for correctness one by one by the Thesis Team. In accordance with the information from the Thesis Coordinator as follows:

"So like this, before students submit their results, we, the thesis team, carry out a selection check of student data, the student questionnaire." (N8)

Documentation is also evidence that can be used to check the authenticity of student research data. The form of documentation analyzed is in the form of photos of respondents (Maher et al., 2018). This is in accordance with the respondent's statement as follows:

"For initial detection, the documentation is certain, but the documentation means that not all respondents were photographed, right, only a few samples." (N2)

"Evidence of their research, whether from photo documentation, recordings, or so on, that shows that they did their research there, reply letters and so on" (N3)

There were also three lecturers who stated that to see falsification of research data is to look at the writing patterns on students' research instruments as follows:

"I asked for the questionnaire, sis. Usually the questionnaire says podo kabeh. That was discovered" (N2)

"Crosscheck the questionnaire, check the writing pattern and then check the consistency of the answers" (N5)

"You can also see the writing of the questionnaire" (N6)

Interviewee 2 also has another way to detect falsification of student research data, namely by looking at the color of the ink used and looking at the physical shape of the research instruments. This was expressed by the interviewee as follows:

"Then ink can also be done, ink. Or from straps, for example, if it falls, it won't be possible to stick it in the same hole, right? Well, that's also discovered" (N2)

One lecturer stated that supervisor support was an important role in helping students complete their final assignments. Every time the thesis supervisor provides guidance, he or she provides motivation to the student that the research carried out by the student, whether related or not, is still the result of research. Like the following statement:

"I have emphasized that the research is going on in terms of starting from the beginning and you don't know the answer, so don't be afraid whether there is a relationship or not, it doesn't matter, so it doesn't affect their judgment, that's how it is" (N3)

Based on the results of the interview, it was found that the prevention efforts carried out by the Diploma IV Midwifery Study Program in Yogyakarta included, among other things, carrying out cross-checks on questionnaires, master tables and SPSS data processing, looking at photo documentation of respondents, analyzing writing and the physical form of questionnaires, providing support. supervisor, and finally a check or filtration from the D4 Midwifery study program thesis team, this is in accordance with the statement by (Deshmukh Krishi Vidyapeeth et al., 2017) that falsification can be detected starting from the initial level of research to the highest level, in this case the initial level of research is the thesis supervisor itself until the examination by the thesis coordinator and research examiners.

Kang & Hwang, (2020) stated that fabrication efforts can occur because researchers consider that research does not re-

quire data quality but quantity of interview results. Data falsification can also occur due to the absence of national regulations regarding scientific data violations. (Jereb et al., 2018) stated that effective communication about rules, increasing student awareness about sanctions or punishments, and enforcing existing sanctions will reduce bad behavior.

Efforts to prevent fabrication and falsification carried out by students are by providing sanctions in the form of re-collecting data, so that the student has to repeat the exam.

"What I know is there is a re-examination" (N1)

"He has to do research again" (N4)

"If at the time of the announcement it is proven or he admits it, then he will immediately be declared as having failed and repeat it" (N7)

Data often relies heavily on theory, in the sense that data presentation and observations are used to support a theory or hypothesis. However, in scientific research, data is used to develop theories or hypotheses. So, wrong data will result in wrong results, obtaining wrong hypotheses and new theories (Resnik, 2014). Gupta's research, (2013) revealed that there are several strategic steps to fight for research integrity, including: zero tolerance for all allegations of violations; the existence of clear information about policies, procedures and guidelines related to existing violations; the role of the Mentor in supervising the progress of the research; the existence of institutions that function to review and evaluate their institutions' research and training environments, such as internal audits of research records; there is communication or socialization regarding applicable rules, procedures for handling violations, developing and promoting ethical behavior and providing clear prevention.

Efforts to overcome falsification of research data can take the form of verbal warnings, reducing exam scores, re-collecting data which causes students to take a re-

examination. The sanctions imposed to date are based on the supervisor and there are no written rules or SOPs regarding sanctions imposed for falsifying student research data. This is not in accordance with Gupta's (2013) research which states that every organization involved in clinical research must have and implement clear policies as well as Standard Operating Procedures (SOP), and open communication between research groups about important aspects of the research. clinical.

Conclusion

Scientific research is an effort to obtain hypotheses and new knowledge, but with data falsification, either fabrication or falsification, the research results obtained are the results of wrong research. In this case, efforts to prevent fabrication and falsification are carried out in the Yogyakarta Midwifery Diploma IV Study Program starting from supervisors, thesis coordinators, to examining lecturers during thesis exams, but there are no written rules regarding sanctions that are enforced in dealing with falsification of student research data

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