ANALYSIS OF FACTORS UTILIZATION OF ANTENATAL CARE SERVICE

Dona Martilova[1], Husna Farianti Amran[2]

[1,2]Prodi S1 Kebidanan, Fakultas Kesehatan dan Informatika Institut Kesehatan Payung Negeri Pekanbaru
Email : dhonalova@gmail.com

ABSTRAK : ANALISIS FAKTOR PEMANFAATAN PELAYANAN KESEHATAN ANTENATAL

Latar Belakang :Capaian pelayanan kesehatan antenatal pada ibu hamil salah satunya adalah dilihat dari cakupan K1 dan K4. Data Puskesmas Rakit Kulim tahun 2020 cakupan K1 yaitu 47,9%, K4 52,3%, sedangkan di tahun 2021 cakupan K1 mengalami kenaikan yang signifikan yaitu 100% namun pada cakupan K4 81,7%. Dari sini dapat dilihat bahwa ada beberapa pencapaian cakupan belum mencapai target nasional.

Tujuan : untuk menganalisis faktor yang mempengaruhi pemanfaatan pelayanan antenatal di Komunitas Suku Talang Mamak Kecamatan Rakit Kulim.

Metode   Jenis penelitian ini adalah kuantitatif dengan pendekatan cross *sectional* dengan jumlah responden 55 orang dengan kriteria ibu hamil dan ibu yang memliki batita. Variable yang diteliti pada penelitian ini adalah usia, pengetahuan, sikap, kepercayaan/Adat istiadat, jarak dandukungan keluarga. Analisis data menggunakan uji Chi Square.

Hasil: bahwa variabel-variabel memiliki kemaknaan secara statistik yaitu Usia (*P value* 0,011), Pengetahuan (*P value* 0,000), Sikap (*P value* 0,006), Kepercayaan/Adat/Istiadat (*P value* 0,001), Jarak (*P value* 0,047), dan Dukungan Keluaraga (*P value* 0,004)

Kesimpulan : Penelitian menunjukkan ada hubungan usia (p= 0,011), pengetahuan (p = 0,000), sikap (p = 0,006), kepercayaan/adat (p = 0,001), jarak (p = 0,047), dukungan keluarga (p = 0,004).

Saran : Disarankan meningkatkan pengetahuan ibu dengan tetap melakukan promosi kesehatan dengan pendekatan budaya dan sosial, serta menanamkan sikap yang positif pada agar terus rutin memanfaatkan pelayanan antenatal sehingga terhindar dari komplikasi dalam kehamilan

Kata kunci : Faktor, Pemanfatan layanan Antenal, Suku Talang Mamak

ABSTRACT

Background: One of the achievements of antenatal health services for pregnant women is seen from the coverage of K1 and K4. Data from the Rakit Kulim Health Center in 2020, K1 coverage was 47.9%, K4 52.3%, while in 2021 K1 coverage experienced a significant increase, namely 100% but K4 coverage was 81.7%. From this it can be seen that there are several coverage achievements that have not reached the national target.

Objective: to analyze factors utilization of antenatal care service in the Talang Mamak Tribal Community, Rakit Kulim District. This type of research is quantitative with a cross sectional approach with a total of 55 respondents with the criteria being pregnant women and mothers with toddlers. Variable in this research is Age, knowledge, attitude, beliefs/custom, distance, and family support. Data analysis used the Chi Square test.

Results: that the variables have statistical significance, namely Age (P value 0.011), Knowledge (P value 0.000), Attitude (P value 0.006), Beliefs/Customs/Customs (P value 0.001), Distance (P value 0.047), and Family Support (P value 0.004)

Conclusion: Research shows there is a relationship between age (p = 0.011), knowledge (p = 0.000), attitude (p = 0.006), beliefs/customs (p = 0.001), distance (p = 0.047), family support (p = 0.004) .

Suggestion: It is recommended to increase maternal knowledge by continuing to promote health with a cultural and social approach, as well as instilling a positive attitude so that they continue to regularly utilize antenatal services to avoid complications in pregnancy.

Keywords: Factors, Utilization of Antenatal Services, Talang Mamak Tribe

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INTRODUCTION

Based on data from the Central Statistics Agency (BPS) in 2020, the Maternal Mortality Rate (MMR) in Indonesia according to the 2020 Population Census Long Form results was 189/100,000 live births. Meanwhile in Riau Province it is 158/100,000 Live Births (BPS, 2020).

One effort to realize and improve maternal and child health is to provide quality antenatal care. The quality antenatal service (ANC) component has indicators of examination services in the form of 10T, namely: weighing and measuring height, measuring blood pressure, measuring upper arm circumference (LILA), measuring uterine fundal height (TFU), determining tetanus immunization status and administering tetanus toxoid immunization according to immunization status, administering blood supplement tablets of at least 90 tablets during pregnancy, determining fetal presentation and fetal heart rate (DJJ), holding interviews, simple laboratory test services and case management (Kemenkes, 2016).

Antenatal care for pregnant women can be provided at health service facilities (hospitals, clinics, community health centers/pustu/pusling and health worker practices), or other service locations (poskesdes, polindes and posyandu) that provide pregnancy check-up services. Antenatal care for pregnant women is provided at least four times during pregnancy (Mardiyah et al., 2014)

Antenatal care coverage during pregnancy consists of K1, K1 ideal, and K4. K1 is health services received during the pregnancy of the last child by health workers, at least once without taking into account the examination period. Ideal K1 is the health service received during the pregnancy of the last child by health workers, and the first pregnancy check-up is carried out during the 1st trimester of pregnancy. K4 is the health check-up service for pregnancy by health workers with the frequency of ANC during the last child's pregnancy at least 6 times according to The criteria are at least 1 time during the 1st trimester of pregnancy, 2 times in the 2nd trimester and 3 times in the 3rd trimester. The K1, K1 ideal and K4 indicators show access to health services for pregnant women and the level of compliance of pregnant women in having their pregnancy checked by health workers (Kemenkes, 2020).

Based on 2018 Riskesdas data conducted by the Ministry of Health, the proportion of antenatal checks during pregnancy (K1, K1 ideal and K4) in women aged 10-54 years includes K1 visits of 96.1%, K1 Ideal of 86.0% and K4 visits of 74 .1%. In Riau province, K1 visits were 94.7%, Ideal K1 was 84.1% and K4 visits were 69.9% (Kemenkes. RI, 2018)

Antenatal visit coverage is calculated based on the number of pregnant women who received standard antenatal care in a region in a certain period of time divided by the number of all pregnant mothers in that region in the same period multiplied by 100%. The coverage of maternal health indicators is reflected in the indicator of four ANC visits (K4). Based on these indicators, Riau Province has still not achieved the Ministry of Health's RPJMN (Medium Term Development Plan) target of 85%.

Data from the Rakit Kulim Community Health Center in 2020, K1 coverage was 47.9%, K4 52.3%, while in 2021 K1 coverage experienced a significant increase, namely 100% but K4 coverage was 81.7%. From this it can be seen that there are several coverage achievements that have not reached the national target.

Subdistrict Rakit Kulim is located in the Indragiri Hulu Regency in Riau. One of the original occupants of Riau is the Talang Mamak Tribal Community, and they live here. The Talang Mamak people used to be a single, big group. Shifting cultivation has long been their customary farming practice. Moving a family is nothing unique for the Talang Mamak Tribe because, in accordance with their norms, that is the best way.

Because Talang Mamak village is deep in the jungle and has not seen much development, the community generally still has limited access to health services. with the exception of the past few years because of the introduction of new programs in their field. restricted access to medical care.

Utilization of antenatal services is influenced by several factors, namely age, education, knowledge, employment, attitudes, family support, support from staff, access to places of service and family income. The results of Tunny.R and Astuti.AD:2022 research show that there is an influence of pregnant women's age on antenatal care visits, namely p=0.017 (p<0.05), pregnant women's knowledge of antenatal care visits, namely p=0.030 (p<0.05) , but there was no effect of parity on antenatal care visits with a value of p=0.051 (p>0.05) (Rahma Tunny, 2022). Because of this phenomenon, the aim of this research is to analyze the Factors Utilization Of Antenatal Care Service in the Talang Mamak Tribe Community, Rakit Kulim District, Riau.

RESEARCH METHODS

This type of research is quantitative with a cross sectional approach. The research was conducted in August-October 2023. The population

in this study was all pregnant women from Sungai Ekok village and Talang Perigi village with the criteria for respondents being 55 people from the Talang Mamak tribe in August-October 2023. And the entire population is taken as the research object.

The data collection instrument used was a questionnaire in the form of a list of questions to determine the variables studied. Data analysis used is univariate and bivariate analysis. Univariate data analysis was carried out to see the frequency distribution of the independent variables (Age, Knowledge, Attitudes, Beliefs/Customs, Distance, Family Support for pregnant women) and the dependent variable (Utilization of Antenatal Services). Bivariate analysis was carried out to see the relationship between the independent variables and the dependent variable using the chi-square test.

RESEARCH RESULTS

Based on the table, it is known that respondents are in the at-risk reproductive age category (<20 and >35 years), namely 31 respondents (56.4%), who have low knowledge, namely 28 people (50.9%), who have a positive attitude, namely 30 respondents (54.5%). %), influenced by beliefs/customs, namely 30 respondents (54.5%), being at an inaccessible distance to antenatal services, namely 29

respondents (52.7%) and not receiving family support, namely 28 respondents (50.9%)

Table 1
Frequency Distribution of Respondents Based on Factors influencing the use of antenatal care In the Talang Mamak Tribe Community, Rakit Kulim District, Riau

Category	f	%
Age		
At risk (< 20 and > 35 years)	31	56,4
No risk (20-35 years)	24	43,6
Knowledge		
Low	28	50,9
Tall	27	49,1
Attitude		
Positive	30	54,5
Negative	25	45,5
Beliefs/Customs		
There is	30	54,5
There isn't any	25	45,5
Distance		
Affordable	26	47,3
Unreachable	29	52,7
Family support		
Support	27	49,1
Does not support	28	50,9

Table 2
Factors that influence the use of antenatal services in the Talang Mamak tribe, Rakit Kulim District, Riau

Characteristics	Utilization of Antenatal Services				Total		P Value	OR
	Used		Not Used					
	F	%	F	%	F	%		
Age								
At risk (< 20 and > 35 years)	17	77,3	14	42,4	31	56,4	0,011	4,614
No risk (20-35 years)	5	22,7	19	57,6	24	43,6		
Knowledge								
Low	19	86,4	9	27,3	28	50,9	0,000	16,889
Tall	3	13,6	24	72,7	77	49,1		
Attitude								
Positive	17	77,3	13	39,4	30	54,5	0,006	5,231
Negative	5	22,7	20	60,6	25	45,5		
Beliefs/Customs								
There is	18	81,8	12	36,4	30	54,5	0,001	7,875
There isn't any	4	18,2	21	63,6	25	45,5		
Distance								
Affordable	14	63,6	12	36,4	26	47,3	0,047	3,063
Unreachable	8	36,4	21	63,6	29	52,7		
Family support								
Support	16	72,7	11	33,3	27	49,1	0,004	5,333
Does not support	6	27,3	22	66,7	28	50,9		

Based on the table, it is known that respondents who are in the risk age category (<20 years and >35 years) utilize antenatal services (77.3%), respondents who have high knowledge do not utilize antenatal services, namely 24 respondents (72.7%), respondents Those who have a negative attitude do not utilize antenatal services, namely 20 respondents (60.6%), beliefs/customs of respondents do not utilize antenatal visits, namely 21 respondents (63.6%), unaffordable distance causes respondents not to utilize antenatal services, namely 21 respondents (63.6%) and unsupportive families caused respondents not to take advantage of antenatal visits, namely 22 respondents (66.7%).

Based on bivariate analysis using the chiquare test, the results showed that the variables had statistical significance, namely Age (P value 0.011), Knowledge (P value 0.000), Attitude (P value 0.006), Beliefs/Traditions (P value 0.001), Distance (P value 0.047), and Family Support (P value 0.004)

DISCUSSIONS
Relationship between Age and Utilization of Antenatal Services

Age influences a person's behavior, where someone who is more mature will be more mature in thinking. The older you are, the more mature a person's level of maturity and strength will be in thinking and working. This is because age influences a person's thinking, apart from that, age also makes a person have experience in life so they are able to decide what is best for their health (Wati, 2014)

This research shows that there is a significant relationship between age and the use of antenatal services (p value = 0.011), of the 55 respondents who are at risk, there are still 14 respondents (42.4%) who have not yet utilized health services for antenatal checks..

In fact, maternal age can be used as a measuring tool in determining whether pregnancy or childbirth is risky or not. The lower a person's age in pregnancy, the greater the risk of pregnancy and childbirth. Likewise, the higher a person's age in pregnancy can influence the optimal condition of the mother and fetus during the birth that will be faced (Varney et al., 2004)

Additionally, it was discovered in this survey that 19 respondents, or 57.6%, of pregnant women in the no-risk age group (20–35 years old), did not get antenatal care.

Research by Tati Awalia & Sari (2023) provides support for this study. The findings indicated that age and the use of antenatal services had a significant relationship (P.value 0.001) with an OR value of 0.081, indicating that pregnant women are primarily between the ages of 20 and 35. less likely to use ANC services by 0.081 times.

Relationship between Knowledge and Utilization of Antenatal Services

Based on the knowledge variable from 55 respondents, an odds ratio (OR) value of 16 was obtained, meaning that mothers with low knowledge had a tendency not to utilize antenatal care that was 16 times greater than mothers with high knowledge. So there is a significant relationship between maternal knowledge and the use of antenatal services because the P value is 0.000 or less than 0.05.

The basic characteristic of the level of knowledge is memory about something that one knows either through experience, learning or information received by other people. Both knowledge and belief are a person's mental response in relation to certain objects that are realized as existing or occurring. Knowledge can be wrong or erroneous, because if a knowledge turns out to be wrong or erroneous, it cannot be considered knowledge. so that what is considered knowledge changes its status to belief (Soekidjo Notoatmodjo, 2014)

The study's findings are consistent with earlier research (Tura, 2009), which found a correlation between prenatal service use and understanding about prenatal care. where prenatal care are used by 73.4% of respondents who are aware of pregnancy. (OR = 33.33, 95%CI: 20.00, 50.00)

The Relationship between Attitudes and Utilization of Antenatal Services

Judging from the attitude variable, it was found that the odds ratio (OR) value was 5.231, meaning that mothers with a negative attitude had a tendency not to use antenatal care that was 5.231 times greater than mothers who had a positive attitude. So there is a significant relationship between attitude and utilization of antenatal services because the P value is 0.006 or smaller than 0.05.

Mothers who have unpleasant experiences in antenatal care with health workers and a lack of trust in health workers will be more likely to choose to have their pregnancy checked rather than with medical personnel such as midwives. They felt close to the midwife to be more patient in waiting for delivery. Apart from that, the service and attitude of health workers also influence the use of antenatal care services chosen by the mother (Olayinka et al., 2012)

Pregnant women's ignorance of the value of prenatal exams is another reason why they do not use antenatal care; of those surveyed, 268 (51.4%) and 213 (40.9%) believe there are no health issues during pregnancy. Aside from that, one of the things preventing the usage of antenatal services is embarrassment and fear of medical professionals. (Tura, 2009)

Because of this, health professionals need to communicate, educate, and inform the public about ANC more effectively in order to reach all societal segments, particularly rural pregnant women.

Relationship between Beliefs/Customs and Utilization of Antenatal Services

Looking at the belief/custom variable, it is found that the odds ratio (OR) value is 7.875, meaning that mothers in the belief/custom category have a tendency not to utilize antenatal services that is 7.875 times greater than mothers in the absence belief/custom category. So there is a significant relationship between beliefs/customs and the choice of birth attendant because the P value is 0.001 or smaller than 0.05 Customs/culture is defined as a combination of lifestyle, beliefs, values, knowledge, rules and objects that provide guidance to its followers, in the form of thoughts and actions, and are sustainable, cumulative and progressive. Someone with the same cultural background will interpret people in their group differently, but will perceive people outside their group as the same. (Soekidjo Notoatmodjo, 2014)

From a cultural aspect, there are too many taboos and abstinence from eating for pregnant women is still considered a normal event. If someone has a culture that is contradictory and detrimental to health, then this will be prohibited by the health officer who examines him. This will make someone reluctant to return to using these health services (Indriyani dan Asmuji, 2014).

The concept of culture is also influenced by beliefs, values and habits, including from a health perspective and the way individual health is implemented. Indonesia, which stretches from Sabang to Merauke, has thousands of thousands of tribes with different customs. Some of these customs are still considered "primitive and do not care about health (Utami, 2019)

Beliefs and cultural/customary practices are important considerations when deciding whether to use prenatal treatments. Specifically, cultural norms and beliefs influence when a pregnant woman should reveal her pregnancy and can discourage women from obtaining prenatal care during the first trimester. Maternal practices and beliefs that have been identified include consulting village elders for guidance, remaining faithful to one's partner, and knowing when to disclose pregnancy. Health authorities pointed out that because pregnant women are frequently surrounded by people who hold similar cultural views, it can be challenging to reject them if they attempt to defy expectations. (Titaley et al.2010) (Roberts et al. 2017)

The Talang Mamak Riau tribal community has beliefs and culture that they believe in. The people of the Talang Mamak tribe have the belief that during pregnancy there are things that they believe to be a form of advice given by their ancestors that must be obeyed. However, apart from that, there are also some people from the Talang Mamak tribe who also have beliefs, but consider things to be normal and not to be ignored. fear/obey. In terms of culture, the Talang Mamak tribe has a culture that during pregnancy there are traditions that must be followed, they have the same tradition regarding pregnancy care which is called beteling, which is a form of agreement between pregnant women and village midwives to help with the pregnancy process until delivery. (Arlis, 2021)

Relationship between Distance (Accessibility) and Utilization of Antenatal Services

Judging from the research results, there is a significant relationship between accessibility (distance) and the use of antenatal services because the P value is 0.047 or smaller than 0.05

Accessibility means that health services must be accessible to the community, not hindered by geographical, social, economic, organizational and linguistic conditions. The farther the distance from home to the puskesmas, the less often the mother makes check-up visits to the puskesmas. Geographic access is measured by distance, travel time, travel costs, type of transportation to obtain health services. Pregnant women who use antenatal services can easily access antenatal services, the distance between home and health services is close and can be accessed on foot. If the distance between the houses is quite far, the mother uses transportation that is easily available at an affordable cost and does not take a long time to travel. Meanwhile, pregnant women whose homes are far away will rarely use antenatal services and find it difficult to find public transportation and spend a long time traveling so they will rarely have pregnancy checks. (Rauf et al., 2013).

It was also discovered in this study that 21 respondents (63.6%) did not use prenatal services since it was difficult for them to get to prenatal care facilities.

This conclusion is consistent with that of Tsegay et al. (2013), who found that 602 respondents (or 54% of the sample) had at least one prenatal visit at a health facility. Among the excuses given for not seeking prenatal care were not feeling ill (32.7%), not understanding the advantages of the treatment (28.2%), feeling ashamed (16.7%), having a heavy task (13.4%), and facilities. Health that is too remote to be challenging to access (12.5%).

The Talang Mamak tribe lacks public transportation for accessing maternity treatments because getting to health facilities is difficult due to the distance and poor road conditions, especially on rainy days. The Talang Mamak tribe primarily consists of motorcyclists and pedestrians. (Arlis, 2021)

Relationship between Family Support and Utilization of Antenatal Services

Judging from the research results, there is a significant relationship between family relationships and the use of antenatal services because the P value is 0.004 or smaller than 0.05

The support of husbands and families is very important in this case, because the husband's participation will support pregnant women in coming to health services, as well as helping pregnant women at important times.

Pregnant women will make regular Antenatal Care visits if their husband recommends, provides support, then the pregnant mother is willing to do it. Support is really needed by pregnant women, especially pregnant women whose gestational age is approaching birth. The individual who plays the most role in providing support is the husband. The greater the husband's support, the more frequent the Antenatal Care visits. Pregnant women will make regular Antenatal Care visits if their husband recommends, provides support, then the pregnant mother is willing to do it (Sari et al., 2015)

This study supports previous research (Abosse et al., 2011) that found a strong relationship between the use of prenatal services and favorable husband support for ANC. ANC usage is higher among pregnant women whose husbands see it favorably than it is among those whose husbands view it unfavorably (OR=3.5; 95%CI 1.46, 8.34).

CONCLUSION

The research results show that there is a relationship between age (p value = 0.011), knowledge (p value = 0.000), attitude (p value = 0.006), beliefs/customs (p value = 0.001), distance (p value = 0.047), and family support (p value = 0.004) with the use of antenatal services.

SUGGESTION

It is recommended to increase maternal knowledge by continuing to promote health with a cultural and social approach, as well as instilling a positive attitude so that they continue to regularly utilize antenatal services to avoid complications in pregnancy.

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BRASE (BRACELET NAUSEA) REDUCE NAUSEA, VOMITING IN PREGNANCY

Septi Indah Permata Sari[1], Findy Hindratni[2], Lailiyana[3]

[1,2]Poltekkes Kemenkes Riau
*Korespondensi email: septiindahps07@gmail.com, findy@pkr.ac.id

ABSTRAK: BRASE (BRACELET NAUSEA) UNTUK MUAL MUNTAH DALAM KEHAMILAN

Latar Belakang: Mual dan muntah kehamilan adalah komplikasi kehamilan yang paling umum terjadi pada 90% ibu hamil. Etiologi mual dan muntah kehamilan tidak diketahui dengan pasti, bisa disebabkan karena perubahan hormon, imunologis, dan anatomi. Akupresure merupakan perkembangan terapi pijat yang berlangsung seiring dengan perkembangan ilmu akupuntur. Dengan terapi ini, akupresur lebih menarik sebagai alternatif yang aman dan non-invasif. Namun dengan berkembangnya jaman, diperlukan terobosan baru guna mempermudah dalam melakukan teknik ini, diperlukan suatu inovasi sederhana dan low cost agar semua masyarakat mendapatkan maanfaat dari teknik ini.

Tujuan : Untuk mengetahui pengaruh akupresu P6 dengan Bracelet Nausea (BraSe) untuk megurangi mual dan muntah pada ibu hamil.

Metode: Penelitian ini merupakan penelitian praeksperimen dengan non-randomized uncontrolled trial with pretest- posttest without control group design, yaitu desain eksperimen yang dilakukan dengan pretest sebelum diberikan perlakuan, kemudian diberikan perlakuan, dan selanjutnya dilakukan posttest. Pendekatan yang digunakan adalah cross sectional. Penelitian ini dilakukan di Klinik Taman Sari 6 Kota Pekanbaru. Populasi dalam penelitian ini adalah seluruh ibu hamil yang melakukan pemeriksaan kehamilan di klinik Taman Sari bulan Februari – Juli 2022. Teknik pengambilan sampel menggunakan total sampling yang berjumlah 20 orang. Penelitian dilakukan dengan cara kunjungan rumah, selanjutnya dilakukan informed consent dan pre-test setelah itu di lakukan akupresure dalam waktu 3 hari pada pagi hari dan setelah hari ke 3 dilakukan post-test. Instrumen dalam penelitian ini Lembar kuesioner Pregnancy- Unique Quantification of Emesis-24 (PUQE 24). Analisa data secara univariat dan bivariate dengan Uji T-Test.

Hasil : Hasil penelitian didapatkan bahwa rata-rata frekuensi mual dan muntah sebelum diberikan akupresur pada titik perikardium 6 adalah sebesar 2.25 (SD 0.44) dan sesudah diberikan akupresur pada titik perikardium 6 dengan BraSea terjadi penurunan frekuensi mual dan muntah dengan nilai rata-rata sebesar 1,8 (SD 0.41). Hasil Uji Two Sample T Test menunjukkan bahwa ada pengaruh akupresur pada titik perikardium 6 ($p-0,001$).

Kesimpulan: ada pengaruh akupresu P6 dengan menggunakan Bracelet Nausea (BraSe) untuk megurangi mual dan muntah pada ibu hamil.

Saran : Untuk menjaga kehamilan berjalan denga naman, ibu hamil tidak boleh mengesampingan keluhan yang dirasakan termasuk mual-dan muntah karena dapat menjadi masalah serius. Akupresur merupakan pengobatan non-invasif yang baik diambil oleh ibu hamil untuk mengurangi mual dan muntah.

Kata Kunci : mual, muntah, acupresur P6, ibu hamil, Bracelet Nausea

ABSTRACT

Background: Nausea and vomiting during pregnancy are the most common pregnancy complications that occur in 85% of pregnant women. High levels of the hormone hCG in pregnancy are thought to be the cause of nausea and vomiting. Acupressure is the development of massage therapy that goes hand in hand with the development of acupuncture. Acupressure at the point of pericardium 6 can reduce nausea and vomiting because the stimulation can increase the release of beta-endorphin.

Purpose: To determine the effect of P6 acupressure to reduce nausea and vomiting in pregnant women.

Method: This research is a pre-experimental study using a one-group pre-post-test research design. The approach used is cross-sectional. This research was conducted at Taman Sari 6 Clinic, Pekanbaru City. The population in this study were all pregnant women who had a pregnancy check-up at the Taman Sari clinic from February to July 2022. The sampling technique used a total sampling of 25 people. The instrument in this study was the Pregnancy- Unique Quantification of Emesis-24 (PUQE 24) questionnaire. Data analysis was univariate and bivariate with the T-Test.

Results: The results showed that the average frequency of nausea and vomiting before being given acupressure at the pericardium 6 was 2.56 (SD 0.51) and after being given acupressure at the pericardium 6 there was a decrease in the frequency of nausea and vomiting with an average value of 2.04 (SD 0.35). The results of the Two Sample T Test showed that there was an effect of acupressure on the 6th pericardial point (p-0.000).

Conclusion: there is an effect of P6 acupressure to reduce nausea and vomiting in pregnant women.

Suggestion: To keep the pregnancy going with the name, pregnant women should not put aside the complaints they feel, including nausea and vomiting because they can be a serious problem. Acupressure is a non-invasive treatment that is good for pregnant women to reduce nausea and vomiting.

Keywords: Nausea,Pregnant Women, P6 Acupressure,Vomiting,

INTRODUCTION

Nausea and vomiting are common problems in early pregnancy. Although often called 'morning sickness', nausea and vomiting can occur at any time and can last throughout the day (Steele et al., 2001) . Symptoms usually begin between four weeks and seven weeks of gestation and disappear by 16 weeks of gestation in about 90% of women (Can Gürkan & Arslan, 2008; Festin, 2014) . Most women do not require treatment, and complete pregnancy without special intervention. However, if nausea and vomiting become severe and persistent, this condition can progress to hyperemesis, especially if the woman is unable to maintain adequate hydration, fluid and electrolyte balance, and nutrition. (Adlan et al., 2017a; Grenier et al., 2021; Hollyer et al., 2002) . The detrimental impact of severe vomiting on the fetus is premature birth and low birth weight (LBW). Meanwhile, the most frequently encountered impact of nausea and vomiting for pregnant women is anemia (Can Gürkan & Arslan, 2008; Festin, 2014) .

Nausea affects about 70% and vomiting about 60% of pregnant women (Davoudi-Kiakalayeh et al., 2017; Festin, 2014) . The cause of nausea and vomiting in pregnancy is unknown, one theory is an increase in *human chorionic gonadotrophin* (hCG) concentration, a history of hydatidiform mole (Festin, 2014; Saberi et al., 2013) . In addition, endocrine and psychological factors are suspected, but the evidence is inconclusive. Female fetal sex has been found to be a clinical indicator of hyperemesis (Adlan et al., 2017b; Festin, 2014) . The severity of symptoms plays an important role in determining treatment. Simple dietary advice and lifestyle changes can be effective treatment options. In addition, alternative approaches such as acupressure, acupuncture, reflexology, hypnosis or osteopathy have also been shown to reduce or even eliminate (Galeshi et al., 2020; Jamigorn & Phupong, 2007; O'Brien et al., 1996) .

Acupressure is considered one of the non-pharmacological and non-invasive treatment modalities for nausea and vomiting of pregnancy (Galeshi et al., 2020; Steele et al., 2001) . In recent years, acupressure has been seen as a treatment modality to consider (Adlan et al., 2017a; Galeshi et al., 2020; O'Brien et al., 1996; Saberi et al., 2013) . The P6 point is located on the surface of the forearm approximately 4.5 cm above the wrist between the flexor carpi radialis and palmaris longus medialis tendons which is useful for reducing nausea and vomiting (Adlan et al., 2017a; Galeshi et al., 2020; O' Brien et al., 1996) . Although the reasons underlying the efficacy of these points in reducing symptoms of nausea and vomiting have not been fully explained, it appears that the use of acupressure at P6 is effective in reducing nausea and vomiting (Adlan et al., 2017a; Fugh-Berman & Kronenberg, 2003; Galeshi et al., 2020 ; Grenier et al., 2021; O'Brien et al., 1996; Saberi et al., 2013) .

Based on various national and international articles, pressing the P6 point is useful for treating nausea and vomiting in pregnancy, so a simple and low cost innovation is needed so that all people can benefit from this technique. Therefore, this research aims to create a tool based on Appropriate Technology (TTG) to treat nausea and vomiting in the form of a bracelet called the *"Nausea Bracelet (BraSe)"*. BraSe is a 2 cm wide bracelet with convex plastic buttons that are worn on the skin to press the P point . This bracelet uses the principle of acupressure by placing a small button which functions to provide constant pressure to the P6 point on the wrist.

RESEARCH METHODS

This study identified the effectiveness of acupressure using the Nausea Bracelet (BraSe) in reducing nausea and vomiting in first trimester pregnant women. Research variables consist of independent and dependent variables. The independent variable is acupressure with BraSe, the dependent variable is nausea and vomiting in first trimester pregnant women. The research design used in this study was a pre-experimental design with a non-randomized uncontrolled trial with pretest-

posttest without control group design, namely an experimental design carried out with a pretest before being given treatment, then given treatment, and then a posttest after the research subjects were given treatment for looked at the effect of wristband acupressure with BraSe at the Neiguan point (P6) on TM I pregnant women who experienced nausea and vomiting. The approach used is cross-sectional. This research was conducted at Taman Sari 6 Clinic, Pekanbaru City. The population in this study were all pregnant women who had a pregnancy check-up at the Taman Sari clinic from February to July 2022. The sampling technique used a total sampling technique. The sample in this study were all 25 pregnant women with TM I who experienced nausea and vomiting. The instrument in this study was the Pregnancy- Unique Quantification of Emesis-24

(PUQE 24) questionnaire. The data collection technique was carried out by giving a pre-test by filling out PUQE 24 then giving an intervention and a post-test by filling in PUQE 24. Data analysis was univariate and bivariate with the T-Test.

RESEARCH RESULTS

This research was conducted at the Taman Sari 6 Clinic, Pekanbaru City, located on Jalan Garuda Sakti Gang Budi Luhur No. 40 Simpang Baru District. Handsome Pekanbaru City. This research began in January to August 2023 with a total of 20 respondents whose data was taken before and after being given acupressure at pericardium point 6 using BraSea. The results obtained are presented in the tables below:

Table 1
Average Frequency of Nausea and Vomiting Before and After Giving Acupressure at Pericardium Point 6 with BraSea to First Trimester Pregnant Women at Taman Sari 6 Clinic, Pekanbaru City

Group	N	Mean	Elementary School	Min	Max
Before Intervention (Pre)	20	2.25	0.44	2	3
After Intervention (Post)	20	1.8	0.41	1	2

In table 1 it can be seen that the average frequency of nausea and vomiting in first trimester pregnant women before being given acupressure at pericardium point 6 with BraSea was 2.25 (SD 0.44) and after being given acupressure at pericardium point 6 with BraSea there was a decrease in the frequency of nausea and vomiting with the mean value was 1.8 (SD 0.41).

Table 2
The Effect of BraSea on Pericardium Point 6 in Pregnant Women in the First Trimester on Pregnancy Nausea and Vomiting at the Taman Sari 6 Clinic, Pekanbaru City

Group	N	Mean	Elementary School	p-value
Before Intervention (Pre)	20	2.25	0.44	0.001
After Intervention (Post)	20	1.8	0.41	

In table 2 it can be seen that the results of the Two Sample T Test with a confidence level of 95% show that there is an effect of acupressure at pericardium point 6 with BraSea on nausea and vomiting of TM I pregnant women (0.001).

DISCUSSIONS

The results of research conducted at the Tman Sari 6 Pekanbaru Pratama Clinic regarding the effect of acupressure at pericardium point 6 with BraSea on nausea and vomiting in pregnant women in the first trimester from January to September 2023 showed that the average frequency of nausea and vomiting before being given acupressure at pericardium point 6 it was 2.25 (SD 0.44) and after giving acupressure at pericardium point 6 with

BraSea there was a decrease in the frequency of nausea and vomiting with an average value of 1.8 (SD 0.41). This means that there is a decrease in the frequency of nausea and vomiting before and after being given acupressure at pericardium point 6. In the 24 hours before being given acupressure intervention at pericardium point 6, pregnant women experience nausea and vomiting with a minimum score of 4 and a maximum of 9. This is categorized by the level of nausea and vomiting. moderate vomiting. Within 24 hours after being given acupressure intervention at pericardium point 6 with BraSea, pregnant women experienced nausea and vomiting with a minimum score of 3 and a maximum of 6. This was categorized as mild nausea and vomiting. The results of the Two Sample T Test

showed that there was an effect of acupressure at pericardium point 6 (p-0.001).

Pregnancy is a continuous process starting from ovulation, conception, nidation or implantation and development of the embryo in the uterus until term. During pregnancy, various complications can occur, including nausea and vomiting known as emesis gravidarum). Based on data from the World Health Organization (WHO) in 2013, the incidence of emesis gravidarum reached 12.5% of the number of pregnancies in the world. Based on data from the Ministry of Health of the Republic of Indonesia in 2013, in Indonesia 60-80% of primigravidas and 40-60% of multigravidas experienced emesis gravidarum, 25% had nausea without vomiting, 35% of women experienced emesis gravidarum (Fadhilah et al., 2021; Rusman et al . , 2017) .

The first trimester is a critical period, namely the initial stage of fetal organ formation. If the fetus lacks certain nutrients, it can cause organ failure. Nausea and vomiting in pregnancy also cause psychosocial effects, worries about the economy and work, depression, anxiety, fear of pregnancy (Wills and Forster, 2008). Every pregnant woman will experience different degrees of nausea and vomiting. nauseous. Efforts to overcome this can be done through pharmacology and non-pharmacology. Pharmacology uses vitamin B6 (Jamigorn & Phupong, 2007) . Non-pharmacological therapies such as herbs, acupuncture and acupressure. In pregnant women, the tendency to use non-pharmacological therapy has increased (Matthew Heckroth, MD, R. Tyler Luckett, MD, Chris Moser, DO, Dipendra Parajuli, MD, Thomas L. Abell, 2021) .

Nausea and vomiting during pregnancy are caused by increased levels of the hormones estrogen and progesterone produced by Chronic Gonadotropin (HCG) in the placenta. Pregnant women who experience complaints of nausea and vomiting are natural symptoms that will be felt in the first trimester, usually the mother will experience signs such as dizziness, excessive salivation, and excreting some of the food or even everything that has been consumed. Apart from that, many cases of pregnant women experience excessive nausea and vomiting which can worsen the mother's general condition and can interfere with the daily activities of pregnant women (Dunbar et al., 2022; Liu et al., 2022) . Nausea and vomiting in pregnancy can have serious impacts on the mother and especially on the fetus. Low Birth Weight (LBW) and premature birth are the most common consequences that can harm the fetus due to the severity of nausea and vomiting experienced by the mother (Fadhilah et al., 2021) .

Non-pharmacological treatment using the acupressure method is a safe method for pregnant women and their fetuses. This acupressure technique is a development of massage therapy, and is closely related to the development of acupuncture, because the acupressure technique comes from acupuncture. Acupressure therapy is carried out using fingers to replace needles, but is still carried out at the same points in acupuncture therapy (O'Donnell et al., 2016; Sulistiarini et al., 2018) .

Acupressure at the pericardium point 6 is located three fingers above the wrist between the flexor carpi radialis tendon and the palmaris longus muscle. The mechanism of action of Acupressure at the P6 point is to provide low electrical stimulation to the sensory receptors in the skin thereby activating the αβ and fiber α. These fibers synapse with the dorsal portion of the central nervous system, causing endorphogenic cells to release endorphins from the hypothalamus. The release of endorphins from serotonergic and norepinephrine inhibits the CTZ (chemoreceptor trigger zone) which is located in the tractus solitaries nucleus postrema in the brainstem. Signals to inhibit nausea and vomiting are transmitted to the gray area of the midbrain, causing the release of enkephalin. Enkephalin stimulates type I and type II afferent nerves to release monoamine neurotransmitters: serotonin and norepinephrine in the spinal cord. Both endorphins and adenocorticotropic hormone (ACTH), from the pituitary gland are found in the bloodstream and cerebrospinal fluid (CSF). The opposite effect of CTZ is that dopaminergic receptors signal the 5-HT3 antagonist chemoreceptors in the upper mucosa of the digestive tract, to increase gastric motility and stop the vomiting reflex due to pressure at the P6 point (Putra et al., 2021) .

Various studies have been carried out to see the effectiveness of stimulation at the P6 point on the incidence of nausea and vomiting in pregnant women, including research by Ni Ketut Somoyani (2018) with the title Complementary Therapy to Reduce Nausea and Vomiting during Pregnancy stating that the application of acupressure at the PC6 point , it shows that there is an influence of PC 6 point acupressure on emission gravidarum with p-value = 0.000 (Somoyani, 2018) . Similar research conducted by Adlan *et.al.* (2017) with the titleAcupressure as adjuvant treatment for the inpatient management of nausea and vomiting in early pregnancy: A double-blind randomized controlled trial showed results of using acupressure bands at the Neiguan point (P6) for 12 hours every day for three days in patients Hospitalization with hyperemesis gravidarum significantly reduces

symptoms of nausea, vomiting and vomiting as well as ketonuria and leads to a reduction in hospital stay. There was a statistically significant increase in the Emesis and Nausea Quantification of Pregnancy scores from the first to the third day of hospital admission in the treatment group compared to the placebo group. Patients who received Neiguan point acupressure also showed a significant increase in ketonuria scores. The treatment group required a shorter hospital stay compared to the placebo group. The only reported side effect of acupressure bands is wrist redness (Adlan et al., 2017b) .

Other supporting research was also conducted by Ana Mariza et al (2019) regarding " The application of acupressure at point P6 for emesis gravidarum in pregnant women in the 1st trimester" showsvomiting before being given the intervention Mean 10.53 Min 9 Max 13 and Standard Deviation 1.408 and Standard Error 0.257, after being given acupressure Mean 7.30 Min 5 Max 10 and Standard Deviation 1.317 and Standard Error 0.240. The statistical test results showed that the P-value = 0.000, meaning that there was an effect of administering acupressure at the p6 point on nausea and vomiting in TM I pregnant women at BPM Wirahayu Panjang in 2018. Conclusion: Acupressure stimulates the regulatory system and activates endocrine and neurological mechanisms, by stimulating work hypothalamus to release endorphins which provide a feeling of relaxation (Mariza & Ayuningtias, 2019) . The same research by Akhu -Zaheya, Laila M. Khater, Wejdan A. Lafi, Asma Y. (2017) with the title " *The Effectiveness of Hologram Bracelets in Reducing Chemotherapy-Induced Nausea and Vomiting Among Adult Patients With Cancer* : shows that The use of hologram bracelets in cancer patients has a positive influence on nausea and vomiting. Rates of nausea and vomiting decreased and activities of daily living scores increased (Akhu-Zaheya et al., 2017) .

Other research that supports this is research conducted by Indah Sari, Dita and Wahyuningsih, Sri (2021) with the title " The Effectiveness of Acupressure Therapy on Decreasing Complaints of Nausea and Vomiting in Pregnant Women" shows that from the nine papers reviewed it was found that acupressure therapy at point P6, point KID21 , Zu San Li, and Gong Sun points are effective in reducing complaints of nausea and vomiting in pregnant women who are carried out regularly. The conclusion from this literature review is that non-pharmacological acupressure therapy is effective in reducing nausea and vomiting in pregnant women (Indah Sari & Wahyuningsih, 2021) . Research conducted by Nadiah Fadhilah, Mayetti, Rosfita

Rasyid (2020) with the title " Effect of Pericardium Point Acupressure 6 on Gravidarum Emesis Trimester I Pregnant Women at the Working Area Public Halth Center Koto Berak In 2020" resulted in the average emesis gravidarum score before acupressure in the experimental group was 8.69 ± 0.48 and in the control group was 7.62 ± 1.19. The mean emesis gravidarum score after acupressure in the experimental group was 3.31 ± 0.48 and in the control group was 5.69 ± 1.75. The mean reduction in the emesis gravidarum score for the experimental group was 5.38 ± 0.50 and for the control group was 1.92 ± 1.80. There was a significant difference in emesis gravidarum scores between the experimental group and the control group (p <0.05). The conclusion of this study is that there is an effect of acupressure on pericardium point 6 in the form of a significant reduction in the frequency of nausea and vomiting in first trimester pregnant women who experience emesis gravidarum (Fadhilah et al., 2021) .

According to the researchers' analysis, acupressure at the pericardium point using BraSe can produce good evaluations in pregnant women who experience nausea and vomiting in the categories of mild and moderate nausea and vomiting. Acupressure at the Pericardium 6 point with BraSe is a more practical method, without side effects and focuses more on the body's nerve points so that it can be used as the right solution to reduce nausea and vomiting in pregnant women. In addition, acupressure at the 6 pericardium point has been widely studied with many positive results for relieving nausea and vomiting in pregnant women. The duration of P6 acupressure therapy using BraSe was given in 15 minutes for 3 cycles to research respondents for 3 days. This intervention can be carried out in a sitting, standing or lying position in a position that is comfortable for the patient. As a complementary therapy, acupressure is holistic because it applies a form of caring behavior in the form of healing touch which can provide calm and comfort for the patient, thereby bringing the therapeutic relationship between nurse and client closer. If viewed from a legal perspective, nurses are allowed to apply acupressure as a complementary therapy as regulated in Law no. 38 of 2004 so that nurses have the opportunity to learn and apply this therapy.

CONCLUSION
Acupressure is a development of massage therapy that took place along with the development of the science of acupuncture. With this therapy, acupressure is more attractive as a safe and non-

invasive alternative. However, as time goes by, new breakthroughs are needed to make it easier to carry out this technique. A simple and low cost innovation is needed so that all people can benefit from this technique. Therefore, this research aims to create a tool based on Appropriate Technology (TTG) to treat nausea and vomiting in the form of a bracelet called the "Nausea Bracelet (BraSe)". The results of the Two Sample T Test showed that there was an effect of acupressure at pericardium point 6 (p-0.001).

SUGGESTIONS

It is hoped that other researchers can use other acupressure methods to reduce nausea and vomiting, such as the acupressure techniques KID point 21 (Youmen), St 36 (Zu San Li), and point Sp 3 (Gong Sun). Or you can compare the effectiveness of each point to get more optimal effectiveness.

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DETERMINANTS OF INFANT MASSAGE THERAPY IN OPTIMIZING TODDLER DEVELOPMENT

Ferilia Adiesti[1], Nurun Ayati Khasanah[2], Citra Adityarini Safitri[3]

[1]S1 Midwifery STIKES Majapahit
*Korrespondensi Author : f.adiesti_april86@yahoo.co.id

ABSTRAK PENENTU TERAPI PIJAT BAYI DALAM OPTIMASI PERKEMBANGAN BALITA

Latar Belakang : Pijat bayi sudah lama dilakukan oleh masyarakat di seluruh dunia, khususnya di Indonesia. Pijat bayi secara teratur akan meningkatkan hormon katekol (epinefrin dan norepinefrin) yang memiliki manfaat untuk menstimulasi tumbuh kembang sehingga dapat meningkatkan nafsu makan, menambah berat badan, serta merangsang perkembangan struktur dan fungsi otak. Salah satu faktor yang mempengaruhi terapi pijat bayi adalah dukungan keluarga.

Tujuan : Untuk menganalisis hubungan dukungan keluarga dengan terapi pijat bayi di PMB Nur Khasanah Amd.Keb .

Metode : Penelitian kuantitatif dengan jenis penelitian observasional analitik. Desain penelitian cross sectional. Uji Fisher Exact menggunakan tingkat signifikan 0,05. Populasi sebanyak 85 responden dan menggunakan sampel sebanyak 54 responden. Pengumpulan data melalui kuesioner dan lembar observasi.

Hasil : Hasil penelitian menunjukkan bahwa sebagian besar (74,1%) ibu mendapat dukungan keluarga dan sebagian besar (72,2%) ibu melakukan pijat bayi, dan terdapat hubungan yang signifikan. meningkatkan pelayanan atau penyuluhan pijat bayi, sehingga diharapkan terapi pijat bayi menjadi tindakan yang rutin dilakukan sebagai salah satu upaya pencegahan stunting.

Kesimpulan : Terdapat hubungan yang signifikan antara dukungan keluarga dengan terapi pijat bayi pada ibu yang memiliki bayi usia 0-12 bulan di PMB Nur Khasanah Amd.Keb.

Saran : Bagi ibu dan keluarga ibu sebagai referensi stimulasi tumbuh kembang dan tambahan wawasan tentang pentingnya pijat pada bayi agar bayi mengalami pertumbuhan yang optimal

Kata kunci : Dukungan Keluarga, Pijat Bayi, Perkembangan

ABSTRACT

Background: Infant massage has long been practised by people around the world, especially in Indonesia. Regular infant massage will increase catechol hormones (epinephrine and norepinephrine) which have the benefit of stimulating growth and development to increase appetite, gain weight, and stimulate the development of brain structure and function. One of the factors that influence infant massage therapy is family support.

Objective: To analyze the relationship between family support and infant massage therapy at PMB Nur Khasanah Amd.Keb.

Methods: Quantitative research with analytic observational type of research. Cross-sectional research design. Fisher Exact test using a significant level of 0.05. The population was 85 respondents and used a sample of 54 respondents. Data collection through questionnaires and observation sheets.

Results: The results showed that most (74.1%) mothers received family support and most (72.2%) mothers did baby massages, and there was a significant relationship. improve baby massage services or counselling, so it is hoped that baby massage therapy will become a routine action as one of the efforts to prevent stunting.

Conclusion: There is a significant relationship between family support and baby massage therapy in mothers who have babies aged 0-12 months at PMB Nur Khasanah Amd.Keb.

Suggestion: For mothers and their families as a reference for growth and development stimulation and additional insight into the importance of massage in infants so that babies experience optimal growth.

Keywords: Family Support, Baby Massage, Development

INTRODUCTION

Baby massage is the oldest and most popular

touch therapy known to man. It is said to be touch therapy because through baby massage there will be comfortable and safe communication between the mother and her baby.(Kurniati & Indasari, 2018). Baby massage is very important for the baby's health. Especially when done by the parents themselves to create communication between parents and babies through a touch massage that contains elements of affection, voice, eye contact, and movement. Infant massage can involve the closest family members to bring the emotional connection closer, such as the father, grandmother, or grandfather. A baby's instincts can respond to touch from its mother as an expression of love, protection, and attention (Bandar, Kab, & In, 2022).

Baby massage has long been practised by people all over the world, especially in Indonesia. Regular baby massage will increase catechol hormones (epinephrine and norepinephrine) which have the benefit of stimulating growth and development so that they can increase appetite, gain weight, and stimulate the development of brain structure and function. The problem that might occur is that the implementation of infant massage at this time is the family's assumption that infant massage is not a form of therapy and is natural for infants which can provide many benefits.(Ericha Merammis BR Sembiring et al., 2022). In addition, baby massage can also improve blood circulation and increase the body's metabolism, thereby increasing the baby's weight. Baby massage is an expression of affection between parents and children through skin touch (Lestari et al., 2021; Mrljak et al., 2022).

According to the World Health Organization (WHO) 2017, globally around 20-40% of infants aged 0-12 months experience developmental delays. The prevalence of child development problems in various developed and developing countries includes 12-16% in the US, 22% in Argentina, and 23% in Hong Kong. Several studies have been evaluated based on the impact of failure and even shortening life span (Bhandari, 2017).

According to the Indonesian Ministry of Health (2006), states that 16% of infants experience saraf and brain development disorders ranging from mild to severe (Departemen Kesehatan Republik Indonesia, 2006). The lack of stimulation given to infants adds to the delay in infant development, Experts at the University of Miami School of Medicine since 1986 have researched the benefits of infant massage and proven that the weight development of premature babies who are massaged has increased by 20-40% compared to babies baby massage and 1 mother did not receive family support about baby massage (Hutasuhut, 2018). Mothers need support from the family in performing infant massage therapy or when choosing a massage practitioner for their baby. If the mother does not understand how to massage the baby properly, the mother should seek information through the media that discusses the correct baby massage and is expected to provide information to the mother, then the mother applies it herself. Health workers should provide counselling on the importance of proper infant massage to mothers, fathers, and the baby's closest family (Putri et al., 2020)

The Indonesian Pediatric Association (IDAI) of East Java (2012) examined 2,634 children from the age of 0-3 years old. The results of the examination for development were found to be normal according to age as much as 53%, doubtful (requiring deeper examination) as much as 13%, and developmental deviations as much as 34%. Based on the data above, it can be seen that the number of doubts and developmental deviations is still quite large in Indonesia (Krisdiantini, 2015).

Several other studies have explained that infant massage can significantly increase weight in preterm infants when compared to the control group. This research is in line with research conducted by Dasuki (2010) which states that baby massage can increase baby's weight. The same study was conducted by Purnamasari (2011) explaining that in babies 4 months there is a significant increase in baby weight. (Krisdiantini, 2015)

RESEARCH METHODS

The type of research is observational analytic research, which is a study to find facts with proper interpretation and the results of the study are processed using statistical tests. Researchers want to analyze family support with infant massage therapy using a cross-sectional approach method. Cross-sectional research is a type of research that emphasizes the time of measurement or observation of independent and dependent variable data only once (Windadari Murni Hartini, Cristina Roosarjani, 2019). Independent variables are variables that affect or determine the value of other variables. The independent variable in this study is family support. The dependent variable is the variable whose value is determined by other variables (A Nasir, 2011)

The participants in this study are a. Children aged 1-5 years and b. Children who have gone to kindergarten. The univariate analysis produces data in the form of frequency distribution and percentage of each research variable. The univariate analysis aims to describe the characteristics of the sample by making a distribution table for each independent and dependent variable. Univariate analysis was

conducted on each research variable, both independent and dependent variables. The variables analyzed were family support

The bivariate analysis produces data in the form of observation results. Bivariate analysis was carried out using the Exact Fisher test, namely analyzing the relationship between family support and infant massage therapy using a computerized system, namely the criteria for testing the hypothesis is H1, accepted, if p < a, with a = 0.05. (Mastang Ambo Baba, 2017)

RESEARCH RESULTS

Quantitative analytic research with a cross-sectional approach, namely the collection of exposure and results at one time to describe the characteristics of the subject and the relationship between variables. The independent variable is family support, and the dependent variable is baby massage. The study population was all pregnant women who gave birth from 2020 to 2021 at the Roichah clinic, totalling 85 people. The sampling technique used a simple random sampling technique of 54 people. Data processing was carried out univariate, bivariate and multivariate. The instruments in this study are observation sheets and secondary data from medical records. Bivariate analysis with Chi-square test with 95% confidence level (α=0.05).

Table 1
Frequency Distribution of Respondents by Age

Age	Frequency (f)	Percentage (%)
At Risk (<20th and >35th)	5	9.3
Not at Risk (20-35 years old)	49	90.7

Source: Primary Data

Table 2
Frequency Distribution of Respondents Based on Education

Level	Frequency (f)	Percentage (%)
SD	2	3.7
SMP	14	25.9
HIGH SCHOOL	24	44.4
PT	14	25.9

Source: Primary Data

Table 3
Frequency Distribution of Respondents Based on Occupation

Level	Frequency (f)	Percentage (%)
Housewife	11	20.4
Private	35	64.8
Not Working	8	14.8

Source: Primary Data

Table 4
Frequency Distribution of Respondents Based on Family Support

Family Support	Frequency (f)	Percentage (%)
Positive	40	74.1
Negative	14	25.9

Source: Primary Data

Table 5
Frequency Distribution of Respondents Based on Infant Massage

Baby Massage	Frequency (f)	Percentage (%)
Doing	39	72.2
Not Doing	15	27.8

Source: Primary Data

Table 6
Relationship between family support and infant massage therapy

Family Support	Baby Massage Therapy				Total
	Doing	%	Not Doing	%	
Support	35	64.8	5	9.3	40
Not in favor	4	7.4	10	18.5	14

Source: Primary Data

DISCUSSION
Family support

Family support in this study from mothers visiting PMB Nur Khasanah Amd.Keb is divided into 2 groups, namely supportive and non-supportive groups. It is known that the total sample of 54

respondents, most (64.8%) who received family support were 35 respondents and a small proportion (7.4%) who did not receive family support were 4 respondents. Mothers who received family support were more than mothers who did not receive family support.For more than three decades, this theory has been one of the most widely used psychosocial approaches to explain healthy behavior by looking at the health beliefs that individuals have. (To be able to support understanding and understanding in line with this study, researchers use the HBM approach to explain the meaning of health beliefs. Health beliefs according to HBM are: an individual's assessment of the threat that occurs due to health problems that may develop (perceived threat of injury or illness) which includes: perceived susceptibility and perceived severity and consideration of the advantages and disadvantages (benefits and costs) in displaying healthy behavior (Bart, 1994). In the research results obtained and reviewed with several family support theories and health belief model theories. Most mothers who receive family support are influenced by healthy behavior. Factors that influence family support are instrumental support, information support, assessment support, emotional support. These factors will be carried out with the influence of healthy living behavior (Health Belief Model).

Baby Massage Therapy

Of the 54 samples of mothers who had babies aged 0-12 months at PMB Nur Khasanah Amd.Keb 39 respondents (72.2%) did baby massage more than mothers who did not do baby massage as many as 15 respondents (27.8%).Massage is the oldest touch therapy known to man and the most popular. Massage is an art of health care and medicine practiced since centuries ago (Roesli, 2016). Through massage, the baby will feel pressure, stretching and relaxation with gentle pressure then the baby will feel calm massage is also accompanied by a soft voice and affectionate touch. Most babies will fall asleep for a long time once the massage is done to them. Through massage, blood circulation will flow smoothly throughout the body, including to the brain (Harun et al., 2023). One of the important substances carried is oxygen. The fulfillment of sufficient oxygen in the brain makes the baby's concentration and alertness better (Deri Rizki Anggarani & Yazid Subakti, 2013). Baby massage is an expression of affection between parents and children through the touch of skin, the benefits of baby massage include increasing weight and growth, increasing endurance, increasing baby's concentration and making baby sleep well, fostering

the bond of love between parents and children, increasing breast milk production (Ho, Lee, Chow, & Pang, 2010; Lestari et al., 2021; Vicente & Pereira, 2021). Infant massage provides positive biochemical and physical benefits such as reducing stress hormones in infants, positively altering brain waves, improving blood circulation and breathing, increasing baby's weight, relaxing the baby while sleeping, curing colic and bloating, and increasing the bond of affection between mother and baby and increasing milk production (Priyadarshi, Kumar, Balachander, Gupta, & Sankar, 2022; Roesli, 2001). Massage for infants and children requires unique approaches (e.g. manipulations, frequency, locations, strength, permission of children), which determine the effects of this intervention (Chen et al., 2021a; Lestari et al., 2021).Some factors that have a relationship with infant massage therapy at PMB Nur Khasanah Amd.Keb are age, education, and occupation. In the age category, it is divided into 2 groups, namely at-risk age (<20th and >35th) as many as 5 respondents (9.3%) and non-risk age (20-35th) as many as 49 respondents (90.7%). At the age of women who are not at risk tend to be more than women of risky age. Educational data obtained by mothers with a history of high school education being the largest percentage of 24 respondents (44.4%), junior high school and PT amounted to 14 respondents each (25.9%) and elementary education had the smallest percentage of 2 respondents (3.7%). The division of employment is divided into 4 types, namely private as many as 35 respondents (64.8%) more than housewives as many as 11 respondents (20.4%) and not working as many as 8 respondents (14.8%). These results can be seen in appendix 9. The results of the study illustrate that mothers who have known the benefits of infant massage, most (72.2%) mothers do infant massage. This is in line with the theory according to Bastian et al (2014), the factor that influences the massage of infants is the existence of healthy behavior (Health Belief Model) in one component is perceived benefit, namely beliefs related to the effectiveness of various behaviors in an effort to reduce the threat of disease or the benefits perceived by individuals in performing healthy behavior the theory is in line with the results of the study (Farida, 2018; Sri Agus Setyaningsih, Wahyuni, Keperawatan, & Keperawatan Dustira, 2021). Field conducted a narrative review to summarize the literature on massage therapy in the last decade and showed that this intervention may have beneficial effects on many pediatric conditions and may improve gross and fine motor development in children (Field, 2019; Gürol & Polat, 2012; Jeong, Franchett, Ramos de Oliveira, Rehmani, &

Yousafzai, 2021).

Relationship between family support and infant massage therapy

The results of bivariate and univariate analysis of the relationship between family support and infant massage therapy obtained the following results from 54 samples of mothers who have babies aged 0-12 months at PMB Nur Khasanah Amd.Keb there were 40 respondents (74.1%) received family support (positive) more than respondents who did not get family support as many as 14 respondents (25.9%). Of the 54 samples of mothers who received family support to do baby massage were 35 respondents (87.5%), mothers who received family support but did not do baby massage were 5 respondents (12.5%). While mothers who did not get family support but did baby massage were 4 respondents (28.6%), mothers who did not get family support and did not do baby massage were 10 respondents (71.4%). Looking at the Asymp.Sig value: If the Asymp.Sig value <0.05, then there is a significant relationship between rows and columns. If the Asymp.Sig value > 0.05, then there is no significant relationship between rows and columns. Analysis of the Relationship Between Family Support and Infant Massage Therapy The result of Asymptotic Significance (2-sided) / ρ value in this study is 0.000 smaller than 0.05. Statistically Ha is accepted, which means that there is a significant relationship between family support and baby massage therapy for mothers who have babies aged 0-12 months at PMB Hj. Roichah, S.ST., Bd Taman Sidoarjo.

According to Becker, et al 2011 and 2013, behavior change is influenced by individual characteristics, individual assessment of behavior change, individual experience and individual readiness to take actions that can be beneficial in order to avoid disease or reduce the risks posed (Cristanti, 2013). The Health Belief Model theory in this study focuses on external aspects. Family acceptance of infant massage therapy is influenced by family support.

In this study there was a relationship between family support and infant massage therapy, the number of mothers who received family support and did infant massage was more than mothers who did not receive family support. This is related to factors that influence infant massage therapy, namely family support factors, where one of them is the role of the family in realizing healthy behavior (Health Belief Model) in the cues to action component, namely behavior is influenced by something that is a cue to take action, for example family support, husband and

peer support and finally the individual's belief that he will be able to take the action or action (self effcacy)(Satwika, Setyowati and Anggawati, 2021).

External factors on the mother such as family support in deciding to do baby massage or not. Both regarding the magnitude of the benefits of baby massage that can stimulate the growth and development of the baby (Chen et al., 2021; Vicente and Pereira, 2021). In this study, HBM theory is associated with individual beliefs so that they are able to carry out healthy living behaviors, one of which is by doing baby massage therapy, given the great benefits obtained to support the growth and development of babies(Basiri-Moghadam, Basiri-Moghadam, Kianmehr, & Jani, 2015). With the counseling or counseling related to baby massage, it is hoped that it will be able to provide broad insights for mothers who have babies, especially those aged 0-12 months. (Satwika et al., 2021; Vicente, Veríssimo, & Diniz, 2017).

This is in line with the results of Oktavianty's research, 2020, which is based on the results of analyzing the relationship between family support and infant massage therapy, with the Chi Square test obtained a p value <0.05, which is 0.028. Statistically, it can be said that Ha in this study is accepted, meaning that there is a significant relationship between family support and infant massage therapy.

CONCLUSION

Almost all mothers (74,1%) of infants aged 0 to 12 months in PMB Nur Khasanah Amd.Keb had family support (up to 40 respondents). There is a significant association between family support and infant massage therapy for mothers delivering babies between 0 and 12 months of age in PMB Nur Khasanah Amd.Keb.

SUGGESTION

Based on the results of research and discussion, there are several suggestions that need to be conveyed to the community, namely as a source of education and knowledge in order to know the relationship between family support and infant massage therapy so that it is hoped that the community will care about the growth and development of their babies. For mothers and mothers' families as a reference for growth and development stimulation and additional insight into the importance of massage in infants so that babies experience optimal growth.

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EFFECTIVENESS OF GINGER DRINK ON EMESIS GRAVIDARUM IN FIRST TRIMESTER PREGNANT WOMEN

Rini Kundaryanti[1], Sri Dinengsih[2*], Nurul Latifah[3]

[1,2,3] Midwifery Study Program, Faculty of Health Sciences, Nasional University
*Email correspondence: sridinengsih@civitas.unas.ac.id

ABSTRAK : EFEKTIFITAS MINUMAN JAHE TERHADAP EMESIS GRAVIDARUM PADA IBU HAMIL TRIMESTER I

Latar Belakang: Mual muntah atau emesis gravidarum yang terjadi pada kehamilan yang disebabkan karena terjadi peningkatan kadar hormon estrogen dan progesterone yang diproduksi oleh *Human Chorionic Gonadotropine* (HCG). Perubahan hormon pada setiap perempuan hamil responnya akan berbeda, sehingga tidak semua mengalami mual muntah pada kehamilan. jahe merupakan bahan terapi untuk meredakan dan mengurangi rasa mual dan muntah, jahe juga efektif dalam mengurangi emesis gravidarum pada ibu hamil trimester pertama kehamilan.

Tujuan: Mengetahui efektifitas minuman jahe terhadap minuman jahe terhadap emesis gravidarum pada trimester I di Puskesmas Kedaung Wetan Tahun 2023.

Metodologi penelitian: desain *Quasy experiment* dengan rancangan *pretest-posttest with control group design.* Sampel dalam penelitian Ibu hamil trimester I yang emesis gravidarum di Puskesmas Kedaung Wetan pada bulan Juli tahun 2023 sebanyak 24 responden dengan teknik *total sampling*, analisa data menggunakan uji *paired sample t-test* dan *T-Test Independent* yang sebelumnya dilakukan uji normalitas dan homogenitas.

Hasil Penelitian: Emesis gravidarum sebelum dan sesudah pemberian *minuman jahe* mengalami penurunan dengan selisih nilai rata-rata 1,00. Hasil penelitian bivariat uji *paired sample t-test* kelompok intervensi (*p value* 0,000) dan kelompok kontrol (*p value* 0,000). Hasil uji *T-Test Independent* dengan *p value 0,006.*

Simpulan : Ada pengaruh antara tingkat emesis gravidarum sebelum dan sesudah diberikan minuman jahe pada kelompok intervensi, sehingga dapat disimpulkan bahwa minuman jahe efektif terhadao emesis gravidarum pada ibu hamil trimester I di Puskesmas Kedaung Wetan Provinsi Banten Tahun 2023.

Saran : Diharapkan bagi ibu hamil trimester I yang mengalami emesis gravidarum dapat mengkonsumsi minuman jahe sebagi pengobatan kombinasi atau alternatif terapi

Kata Kunci : Emesis, Gravidarum, Jahe, Trimester I

ABSTRACT

Background: Nausea, vomiting or emesis gravidarum that occurs in pregnancy is caused by increased levels of the hormones estrogen and progesterone produced by Human Chorionic Gonadotropine (HCG). Hormonal changes in every pregnant woman will respond differently, so not all experience nausea and vomiting during pregnancy. ginger is a therapeutic ingredient to relieve and reduce nausea and vomiting, ginger is also effective in reducing emesis gravidarum in pregnant women in the first trimester of pregnancy.

Objective: To determine the effectiveness of ginger drinks on emesis gravidarum in the first trimester at the Kedaung Wetan Health Center in 2023. Methodology research: Quasy experiment design with pretest-posttest design with control group design. The sample in the study of pregnant women in the first trimester with emesis gravidarum at the Kedaung Wetan Health Center in July 2023 was 24 respondents using the total sampling technique. Data analysis used the paired sample t-test and Independent T-Test, which were previously tested for normality and homogeneity.

Results Research: Emesis gravidarum before and after giving ginger drinks decreased with an average difference of 1.00. The results of the bivariate study were paired sample t-test in the intervention group (p value 0.000) and the control group (p value 0.000). The results of the Independent T-Test test with a p value of 0.006.

Conclusion: There is an influence between the level of emesis gravidarum before and after being given ginger drink in the intervention group, so it can be concluded that ginger drink is effective against emesis gravidarum in first trimester pregnant women at the Kedaung Wetan Health Center, Banten Province Year 2023.

Suggestion: It is hoped that pregnant women in their first trimester who experience emesis gravidarum can consume ginger as a combination treatment or alternative therapy.

Keywords: Emesis, Gravidarum, Ginger, First Trimester

INTRODUCTION

Pregnancy is the growth and development of the fetus since conception and ends until the onset of labor. Every process in pregnancy is a crisis condition that requires psychological and physiological adaptation to the influence of pregnancy hormones and mechanical stress due to uterine enlargement and other tissues. Physiological changes in early pregnancy are hormonal changes, an increase in the hormones estrogen and progesterone which results in nausea and vomiting (Rizki, Harahap, and Fitri 2022)

Nausea and vomiting is one of the earliest, most common and most stressful symptoms associated with pregnancy. Nausea and vomiting that occurs in pregnancy is caused by increased levels of *estrogen* and *progesterone* hormones produced by *Human Chorionic Gonadotropine* (*HCG*) in the serum of the placenta. The frequency of morning sickness is not only in the morning but can be during the day and even at night. In addition, because of the smell of a dish, half of pregnant women will definitely experience nausea and vomiting. Nausea and vomiting occur in 60- 80% of primi gravida and 40-60% of multi gravida. Hormonal changes in each pregnant woman will respond differently, so not all experience nausea and vomiting in pregnancy(Aprilia 2020)

Interventions to maintain maternal comfort during pregnancy can use drugs or without drugs. The use of drugs can sometimes cause side effects (P and Pernoll, 2017). but interventions without drugs are now widely used to minimize side effects, including the use of aromatherapy, hypnotherapy and massage therapy (Purba, Sharfina Haslin, and Siregar 2023)

Currently, complementary therapy with ingredients from plants that are easily available has been widely used, including: ginger, peppermint leaves and lemon. I Wayan Redi Aryanta (2019), explains that ginger is an anti- emetic (anti-vomiting) which contains zingi beren essential oil which can treat complaints of nausea and vomiting, and provide a comfortable sensation(Redi Aryanta 2019)

Ginger is a plant with a million properties that has been known for a long time. Ginger is one of the important spices. Its rhizome has many benefits, including as a seasoning, beverage, and candy and is also used in traditional medicinal herbs. (Rusman and Andiani, Dewi 2017)

The first advantage of ginger is its volatile oil content, which has a refreshing effect and blocks the gag reflex, while gingerol can get the blood flowing and the nerves working properly. As a result, tension can be melted, the head becomes fresh, and nausea and vomiting are suppressed. The fragrant aroma of ginger is produced by the essential oil, while the oleoresis causes a spicy flavour that warms the body and releases sweat. (Rahayu and Sugita 2018).

The results of Hartuti's research (2021) showed that before being given the intervention, the average respondent experienced the frequency of nausea vomiting 13 times a day, after being given the intervention of warm ginger drink, the average frequency of nausea vomiting decreased to 3.18 times a day with a p value of 0.000. It can be concluded that both clinically and statistically, warm ginger drink has an effect on reducing the frequency of nausea vomiting in first trimester pregnant women(Hastuty 2021)

Based on the results of Yanuaringsih's research (2020), it was found that the average nausea and vomiting in first trimester pregnant women before being given ginger tea was 3. 87 and after being given a ginger consumption intervention for 7 days the frequency of nausea and vomiting was 1.19 from the above data it was found that ginger tea was able to reduce nausea and vomiting in first trimester pregnant women(Yanuaringsih, Nasution, and Aminah 2020)

Preliminary studies conducted by researchers at the Kedaung Wetan Health Centre found that out of 10 pregnant women in the first trimester who checked their womb, 3 people complained of experiencing severe nausea and vomiting, 4 people complained of experiencing moderate nausea and vomiting and 3 people complained of experiencing mild nausea and vomiting. So far, the intervention provided is only in the form of medical intervention. Furthermore, mothers have never consumed ginger brew to overcome nausea and vomiting, so this study aims to determine the effectiveness of ginger drink on Emesis Gravidarum in Trimester I pregnant women at Kedaung Wetan Health Centre in 2023.

RESEARCH METHODS

This type of research is *Quasy Experimental* with *Two group Pretest Post test* design. The sampling technique in this study was *total sampling,* namely first trimester pregnant women who experienced emesis gravidarum at the Kedaung Wetan Health Center, totaling 24 people, divided into ginger boiled water groups as an intervention group and a control group treated with vitamin B6, making ginger water twice a day as much as 100 mg / day for 7 days carried out in July 2023. The pretest measurement was done on day 1 and the post test was done on day 8, The research instrument used the Pregnancy Unique Quantification of Emesis and Nausea (PUQE-24) questionnaire sheet. The

analysis was carried out using the *paired T Test* statistical test using SPSS.

RESEARCH RESULTS

Based on table 1, it is known that in the intervention group, the mean score for nausea and vomiting before (Pretest) was 7.42 and the post test score for nausea and vomiting was 6.42. It can be concluded that there was a significant decrease in the mean score for nausea and vomiting in pregnant women in the first trimester after given ginger drink

In the control group, the pretest score for nausea and vomiting was 7.25 and the posttest score for nausea and vomiting was 7.00, so it can be interpreted that there was a decrease in the average score for nausea and vomiting in pregnant women in the 1st trimester, but it was not significant after administering vitamin B6.

Table 1
Emesis Gravidarum Score Values in First Trimester Pregnant Women before and after in the intervention group and control group At The Kedaung Wetan Health Center

Kelompok		n	Mean	Max	Min	Std.D
Intervensi	Pretest		7.42	5	8	0.996
	Postest	12	6,42	5	7	0.669
Kontrol	Pretest		7.50	4	5	1.485
	Postest	12	7. 00	9	8	0.953

Table 2
Differences In Emesis Gravidarum In The Intervention And Control Groups In In First Trimester Pregnant Women At The Kedaung Wetan Health Center

Kelompok		Mean	Selisih Mean	*Sig (2-tiled)*
Intervensi	Pretest	7.42	0.167	0.000
	Postest	6.00		
Kontrol	Pretest	7.25	-1.000	0.013
	Postest	7.00		

Based on table 2, the results of statistical tests in the intervention group show that the sig (2-tailed) value is 0.000 <0.05, meaning that there is a significant difference in reducing the nausea and vomiting score after being given ginger drink.

In the control group, the sig (2-tailed) value was 0.013 <0.05, so it can be concluded that there was a difference in the decrease in nausea and vomiting scores after being given vitamin B6. It can be concluded that in the 2 groups there was a decrease in nausea and vomiting scores, but significant score values occurred in the intervention group (ginger drink).

DISCUSSION
Nausea and Vomiting Score Values in First Trimester Pregnant Women before and after in the intervention group and control group

The results of this study show that in the intervention group, the mean emesis gravidarum score before (Pretest) being given ginger drink to pregnant women in the trimester of pregnancy was 7.42 after (Post test) giving ginger drink the mean emesis score was 6.42. It can be concluded that there was a significant decrease in emesis score. gravidarum in first trimester mothers after being given ginger drink

In the control group, the emesis score value before being given vitamin B6 was 7.25 and after being given vitamin B6, the emesis gravidarum score value for pregnant women was 7.00, so it can be interpreted that there was a decrease in emesis gravidarum levels after giving vitamin B6. So it can be concluded that there was a decrease in the emesis gravidarum score in first trimester mothers after being given vitamin B6.

In line with research by Ucu (2020) shows that the results of measuring the frequency score of emesis gravidarum levels in pregnant women (Fazar and Uci 2020)

According to Dewi's (2020) research results, the average frequency of emesis in pregnant women before being given ginger infusion was 9.36 times/day and decreased to 4.86 times/day after being given ginger infusion. There is a difference in the average frequency of emesis before and after the ginger infusion intervention with a mean difference of 4.50 with a Z value = -4.123 and a p value = 0.000,

meaning that giving ginger infusion is effective in reducing the frequency of emesis in first trimester pregnant women in the work area Lubuk Sanai Health Center, Mukomuko Regency(Ningsih et al. 2020)

Emesis Gravidarum is a common complaint presented in young pregnancies which is caused by hormonal changes in women due to an increase in the hormones estrogen, progesterone and the release of human chorionic gonadothropine from the placenta, causing nausea and vomiting(Bella Puspa Sari 2021)

Risk factors for severe nausea and vomiting in pregnancy can cause dehydration and weight loss in the mother (Petry et al. 2018)

Ginger contains the essential oils Zingiberena (zingirona), zingiberol, bisabilena, curcumin, gingerol, flandrena, vitamin A and bitter resin which can block serotonin, a neurotransmitter that is synthesized in serotonergic neurons in the central nervous system and cells. lanterochromaffin in the digestive tract so it is believed to give a comfortable feeling in the stomach so it is believed to give a comfortable feeling in the stomach so it can overcome nausea and vomiting (Hastuty 2021)

Ginger treats nausea and vomiting in pregnant women in the first trimester. where nausea and vomiting are caused by changes in the endocrine system during pregnancy, mainly caused by high fluctuations in HCG levels. Ginger contains zingerone and the aroma of ginger is caused by zingiberol. Ginger can work to inhibit serotonin receptors and cause an antimetic effect on the gastrointestinal system, thus reducing nausea and vomiting (Yanuaringsih, Nasution, and Aminah 2020)

Researchers assume that the influence of the increase in the hormones estrogen, progesterone and the release of Human Chorionic Gonadothropine from the placenta causes nausea and vomiting. As a traditional medicinal ingredient, ginger has properties for preventing and treating various diseases, such as digestive system disorders such as nausea and vomiting.

Differences in Emesis Gravidarum in the Intervention and Control Groups in 1st Trimester Pregnant Women

Based on the results of this study, it was found that in the intervention group the p-value was 0.000 < 0.05, it was concluded that there was a significant difference in the nausea and vomiting scores at the Kedaung Wetanma Community Health Center, while in the control group the p-value was 0.013 < 0.05, so It can be concluded that there is a difference in nausea and vomiting scores after being given to the

vitamin B6 group at the Kedaung Wetan Community Health Center, but it is not significant.

Ginger (Zingiber officinale) is a rhizome plant that is very popular as a spice and medicinal ingredient. The rhizome is finger-shaped and bulges in the middle segments. The dominant spicy taste is caused by a ketone compound called zingerone. Ginger belongs to the Zingiberaceae family (meetings).

The results of this study are in line with research by Ramadhani & Ayudia (2019), pregnant women before being given ginger drink 3.65 times/day and after being given ginger drink it decreased to 2.18 times/day. The results of the analysis used a paired t test with a calculated value of 8.452 and p value = 0.000 (α = 0.05). Ginger is effective in reducing emesis gravidarum in pregnant women in the 1st trimester. (Ramadhani and Ayudia 2019)

According to the research results of Inrayani (2017), there is a difference in the average frequency of nausea and vomiting before and after the ginger wedang intervention of 2.45 with a p value = 0.000, which means that giving ginger wedang is effective in reducing the frequency of nausea and vomiting in North Bengkulu Regency in 2017 (Indrayani, Burhan, and Widiyanti 2018)

According to Wati (2020), univariate results were obtained before giving the ginger brew, the majority of respondents experienced moderate emesis, 85.7%, and after giving the ginger brew, the respondents' emetic condition decreased to mild emesis at 78.6%. The results of the Paired Sample T-test obtained a p value = 0.000 (p-value < α = 0.05). So it can be concluded that warm ginger infusion is very influential in reducing emesis gravidarum in the Harapan Raya Pekanbaru Community Health Center Working Area (Wati 2020)

In his article entitled 'The benefits of spices for health', Suparyo (2014) states that ginger has anti-histamine properties which are usually used to cure stress, allergies, fatigue and headaches, overcome throat problems, nausea during seasickness, and treat side effects of chemotherapy. Apart from that, ginger also has anti-inflammatory properties so it is good for treating arthritis and various muscle disorders, reducing bad cholesterol levels, and maintaining heart health. (Redi Aryanta 2019)

Supported by research conducted by Yanuaringsih that from the results of analysis tests using Wilcoxon, P - Value was obtained, which means there is an effect of ginger infusion on nausea and vomiting in pregnant women in the first trimester. The average nausea and vomiting after being given ginger tea was reduced by 2.68 with a standard

deviation of – 0.061. The results of the analysis test using Wilcoxon showed that P - Value < α, which means that there is an effect of ginger infusion on nausea and vomiting in pregnant women in the first trimester. The average nausea and vomiting after being given ginger infusion was reduced by 2.68 with a standard deviation of – 0.061 ((Yanuaringsih, Nasution, and Aminah 2020)

In terms of anti-inflammatory properties, ginger extract has shown the ability to inhibit TNF (Tumor Necrosing Factor) activity and cyclo-oxygenase expression in vitro from human synoviocytes. Substances that inhibit cyclo-oxygenase, namely gingerol, work by blocking the activity of p38 MAP kinase and NF-kB. Ginger also contains essential oils which function as anti-inflammatory, so ginger can inhibit the inflammatory process caused by H.pylori infection. therefore, the frequency of nausea and vomiting caused by H.pylori infection can be reduced. As a herbal medicine, ginger can be used to prevent motion sickness and also anti-vomiting (Ningsih et al. 2020)

According to Purba, his research showed that before and after the intervention was given the average decreased by 5.60 with an SD of 0.83. The results of the statistical tests carried out obtained a p-value of 0.000. > (0.05), meaning that giving ginger candy intervention is quite effective in reducing complaints of nausea accompanied by vomiting in pregnant women in the first trimester of pregnancy (Purba, Sharfina Haslin, and Siregar 2023)

One of the pharmacological functions of ginger is antiemetic (anti-vomiting) which is an ingredient that can remove gas in the stomach which will control vomiting by increasing intestinal peristaltic movements. About 6 compounds in ginger have been proven to be effective antiemetics. These compounds are more directed at the stomach wall than the central nervous system. 18 Ginger is usually safe as a herbal medicine, ginger does not have acute toxicity at doses usually consumed as food or medicine. In large doses of 6 grams or more, ginger rhizome can cure stomach irritation and loss of the protective gastric mucosa (Yanuaringsih, Nasution, and Aminah 2020)

The active substance contained in ginger can make digestion comfortable, causing an anti-vomiting effect by relaxing the intestinal muscles and a stimulant that inhibits the central nervous system from reacting so that the sensation of nausea and vomiting does not arise because it contains phenolic compounds (paradols, shogaols, and also gingerol. The main polyphenols (6-gingernol, 8-gingernol, and 10-gingernol) also include quercetin, zingerone, gingerenone-A, and 6-dehydrogingerdione. Apart

from that, there are other components such as terpenes in ginger; β-bisabolene, α-curcumene , zingiberene, α-farnesene, and β-sesquiphellandrene, which can be said to be the components that make up ginger essential oil(Redi Aryanta 2019)

Researchers assume that ginger drink is effective in reducing nausea, vomiting or emesis gravidarum in first trimester pregnant women. The gingerol content is the most important compound and has been proven to have effective antiemetic (anti-vomiting) activity by blocking serotonin, a chemical messenger. This compound causes the stomach to contract so that if it is blocked, the muscles of the digestive tract will relax and weaken so that the feeling of nausea is reduced a lot,

CONCLUSION

There were differences in nausea and vomiting scores in the intervention group and the control treatment group, however the reduction in nausea and vomiting scores was more effective in the intervention group compared to the control group.

SUGGESTION

It is hoped that pregnant women can use ginger as a traditional ingredient which can be processed into ginger drink as an alternative effort to reduce the frequency of nausea and vomiting in pregnant women in the first trimester.

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Wawat Naswati, Anggraini, Ana Mariza

FACTORS RELATED TO PROVIDING EARLY MPASI TO BABIES AGED 0-6 MONTHS

Wawat Naswati[1], Anggraini[2*], Ana Mariza[3],Ledy Octaviani Iqmy[4]

[1,2,3]DIV Midwifery Study Program, Faculty of Health Sciences, Malahayati University
[4]DIV Midwifery Study Program, Faculty of Health Sciences, Malahayati University
*Coresponding email anggraini@malahaytai.ac.id

ABSTRACT : FAKTOR-FAKTOR YANG BERHUBUNGAN DENGAN PEMBERIAN MPASI DINI PADA BAYI USIA 0-6 BULAN

Latar belakang : Menurut data Riset Kesehatan Dasar (RISKESDAS, 2021) 52,5% atau hanya setengah dari 2,3 juta bayi berusia kurang dari enam bulan yang mendapat ASI eksklusif di Indonesia, atau menurun 12 persen dari angka di tahun 2019. Menurut Dinas Kesehatan Propinsi Lampung pada tahun 2021 bayi yang diberikan MPASI sampai usia 6 bulan hanya (32,2%). Dari data Desa Sidokayo juga menyebutkan angka kejadian diare pada bayi umur kurang dari 1 tahun pada tahun 2022 meningkat sebanyak 39 kasus, sedangkan pada bulan Januari hingga Februari 2022 terdapat 8 kasus diare bayi dalam 1 bulan. Dan dari 8 kasus tersebut bayi yang terkena diare kebanyakan dari mereka telah diberikan MP ASI sebelum usia 6 bulan. Penelitian ini dilakukan untuk mengetahui faktor apasaja yang berhubungan dengan diberikannya MPASI dini pada anak usia 0-6 bulan di Desa Sidokayo Kecamatan Abung Tinggi Kabupaten Lampung Utara Tahun 2023. .

Metode penelitian : penelitian ini merupakan survey analitik dengan menggunakan pendekatan cross sectional. Populasi dalam penelitian ini adalah seluruh ibu yang mempunyai bayi usia 0-6 bulan yang berjumlah 40 bayi. Tehnik sampling dengan Total Sampling yaitu sebanyak 40 bayi. Cara pengumpulan data dengan kuesioner. Analisa yang digunakan adalah analisa univariat dan bivariat (chi square).

Hasil penelitian ada hubungan hubungan antara pengetahuan, pendidikan dan pekerjaan dengan diberikannya MPASI dini pada anak usia 0-6 bulan.

Kesimpulan Berdasarkan hasil univariat menujukkan distribusi frekuensi pengetahuan ibu yang baik (52,5%), Pendidikan tinggi (52.5%), ibu yang bekerja (52.5%) dan responden yang memberikan MPASI dini sebanyak 57.5%. Hasil bivariat didapatkan bahwa dari tiga variabel yang diteliti yaitu pengetahuan, pendidikan dan pekerjaan diperoleh p = 0,001, 022 ≤ α = 0,05, , maka ada hubungan antara pengetahuan, pendidikan dan pekerjaan dengan diberikannya MPASI dini pada anak usia 0-6 bulan. Diharapkan bagi masyarakat untuk lebih meningkatkan pengetahuan dengan media yang ada, seperti internet, youtube, leflet dan lain sebagainya.

Saran Diharapkan petugas kesehatan dapat memberikan penyuluhan kesehatan tentang MP-ASI terutama kepada ibu dengan pendidikan rendah dan atau ibu yang bekerja

Kata kunci : MPASI Dini, Pengetahuan, Pendidikan, Pekerjaan

ABSTRACT

Background : According to Basic Health Research data (RISKESDAS, 2021) 52.5% or only half of the 2.3 million babies aged less than six months are exclusively breastfed in Indonesia, a 12 percent decrease from the 2019 figure. According to the Lampung Provincial Health Office in 2021, only 32.2% of infants were given complementary foods until 6 months of age. Data from Sidokayo Village also states that the incidence of diarrhea in infants aged less than 1 year in 2022 increased by 39 cases, while in January to February 2022 there were 8 cases of infant diarrhea in 1 month. And of the 8 cases of infants affected by diarrhea, most of them had been given MP ASI before the age of 6 months. This study was conducted to determine what factors are associated with early complementary feeding in children aged 0-6 months in Sidokayo Village, Abung Tinggi District, North Lampung Regency in 2023. .

Research method : this research is an analytical survey using a cross sectional approach. The population in this study were all mothers who had babies aged 0-6 months totaling 40 babies. The sampling technique with Total Sampling is as many as 40 babies. How to collect data with a questionnaire. The analysis used was univariate and bivariate analysis (chi square).

The results showed that there was a relationship between knowledge, education and work with the provision of early solidity in children aged 0-6 months.

Conclusion Based on the univariate results, the frequency distribution of good maternal knowledge (52.5%), high education (52.5%), working mothers (52.5%) and respondents who gave early solids as much as 57.5%. The bivariate results showed that of the three variables studied, namely knowledge, education and work, p = 0.001, 022 ≤ α = 0.05, so there is a relationship between knowledge, education and work with early complementary feeding in children aged 0-6 months . It is expected for the community to further increase knowledge with existing media, such as the internet, YouTube, leaflets and so on.

Suggestions It is hoped that health workers can provide health counseling about complementary foods, especially to mothers with low education and or working mothers.

Keywords : Early complementary feeding, knowledge, education, work

INTRODUCTION

Mother's milk (ASI) is food during the first months of life (Margaret Lowson, 2013). Breast milk is very useful for the baby's immune system because it contains very important substances which have been proven to fight various kinds of infections, such as ARI, ear inflammation, blood infections and so on (Simkin, 2017).

World Health Organization (WHO) and UNICEF (2012) in 2011 reported world children, namely 136.7 million babies were born in the world and only (32.6%) of them were given exclusive breast milk in the first 6 months. This means that the percentage of MP ASI provision coverage reached (67.4%) in babies in the first 6 months. Based on data from WHO, coverage of exclusive breastfeeding throughout the world was only around (36%) during the period (2001-2014). Based on data from Riskesdas (2013), in Indonesia only (30.2%) babies receive exclusive breast milk, while babies do not receive exclusive breast milk (69.8%), this means that there are (30.2%) babies who receive complementary breast milk aged 6-24 months. %) and those who received early MP-ASI were (69.8%). Meanwhile, the coverage of exclusive breastfeeding for babies up to 6 months of age was only (29.5%) in 2016, this means that the coverage of giving MP ASI reached (70.5%) for babies aged 6 months (Indonesian Health Profile, 2016).

According to Basic Health Research data (RISKESDAS, 2021) 52.5% or only half of the 2.3 million babies aged less than six months are exclusively breastfed in Indonesia, or a decrease of 12 percent from the figure in 2019.

According to the Lampung Provincial Health Service in 2021, the coverage of exclusive breastfeeding in 2019 reached (69.33%) or, in 2020 it was (70.8%) and in 2021 babies who were given exclusive breastfeeding from 0-5 months experienced an increase, namely (73.4%) and only (32.2%) gave it to babies up to 6 months of age (Bandar Lampung City Health Service Performance Report, 2021).

Improper provision of MP-ASI not only disrupts the nutritional intake that the baby should get, but also disrupts the baby's digestion because the digestive system is not yet able to digest or break down the food. As is known, a new baby's digestive system will be ready to digest food with a denser contour than breast milk, after the age of 6 months and above (Ministry of Health of the Republic of Indonesia, 2017).

The risk that occurs if a baby is given MP ASI early before the age of 6 months can increase the risk of allergies, which is caused by the cells around the intestines not being ready to accept the contents of food, thus causing allergies. It can also increase the risk of infection, this is because the immune system of babies less than six months old is not optimal when given food other than breast milk, as well as giving bacteria the opportunity to attack and infect the baby's body (Riskani, 2012).

The large number of factors that cause risks in giving early MP ASI include the mother's attitude which is a factor in giving early MP ASI. Attitude is one of the factors that drives someone's actions. If a mother has a good or positive attitude towards giving MP ASI then the actions that will be taken by her baby in giving MP ASI will also be good and positive, in this case giving MP ASI is given when the baby is over 6 months old taking into account the baby's physical and psychological readiness and quality. and types of complementary foods for breast milk so that the baby's nutritional needs are properly met (Hajrah, 2016).

From data from Sidokayo Abung Tinggi Village, North Lampung Regency in 2016, there were 60% of babies breastfeeding with exclusive breast milk and 40% of those without exclusive breast milk. In 2017, there was a decrease of 56% of babies who

were breastfed exclusively with breast milk and 44% of babies who were not exclusively breastfed (Sidokayo Village Data).

Data from Sidokayo Village also states that the incidence of diarrhea in babies aged less than 1 year in 2022 increased by 39 cases, while from January to February 2022 there were 8 cases of baby diarrhea in 1 month. And of the 8 cases, most of the babies who had diarrhea had been given complementary foods before the age of 6 months (Sidokayo Village Data).

Based on a pre-survey conducted by the author among the community at Posyandu Melati II, Sidokayo Abung Tinggi Village, the number of mothers with babies aged 6-12 months was 40 mothers. A preliminary survey conducted found that 5 mothers had babies aged 3-4 months, 4 had been given MP ASI, and 1 baby had not been given MP ASI. Then the researcher also conducted a second interview with 5 mothers who had babies aged 6-12 months, 3 of the 5 mothers had given MP ASI to their babies when the babies were still 5 months old. So it can be concluded from 10 interviews with mothers who had babies 6-12 months old, 7 out of 10 mothers had given MP ASI before the baby was 6 months old. And of the 7 babies who were given MP ASI, 3 of their mothers admitted that their babies often had diarrhea since they started being given MP ASI. (community interview at Posyandu Melati II Sidokayo Village, 2018).

Based on the description above, the author is interested in conducting research with the title "Factors related to giving MP ASI to babies aged 0-6 months in Sidokayo Village, Abung Tinggi District, North Lampung Regency in 2023

RESEARCH METHODS

In this research, the author took the type of analytical survey research and used research objects on babies aged 0-6 months and research subjects on mothers who had babies aged 0-6 months. The research location was carried out from April-May 2023 in Sidokayo Village, Abung Tinggi District, North Lampung Regency, Lampung Province in 2023. The population used in this research was all mothers who had babies aged 6-12 months starting from April - May 2023 in Sidokayo Village consists of 40 women. This sampling technique that the researcher uses is a saturated sample. The measuring instrument used to measure MPASI, knowledge, education, work is a questionnaire. The analysis used is univariate analysis and bivariate analysis (*chi square*).

RESEARCH RESULTS

Univariate Analysis

Based on table 1, it shows that the majority of mothers are in the category of mothers with good knowledge, namely 52.5% and the least are mothers with poor knowledge, namely 47.5%.

Table 1
Frequency distribution of knowledge in Sidokayo Village, Abung Tinggi District, North Lampung Regency in 2023

Knowledge	Frequency	Percentage
Not enough	19	47.5
Good	21	52.5

Table 2
Distribution of education frequency in Sidokayo Village, Abung Tinggi District, North Lampung Regency in 2023

Education	Frequency	Percentage
Base	19	47.5
Higher	21	52.5

Based on table 2, it can be seen that of the 40 respondents, more than half (52.5%) of the mothers have higher education in Sidokayo Village, Abung Tinggi District in 2023.

Table 3
Frequency distribution of maternal employment in Sidokayo Village, Abung Tinggi District, North Lampung Regency in 2023

Work	Frequency	Percentage
Work	19	47.5
Doesn't work	21	52.5

Based on table 3, it shows that of the 40 respondents, the majority of mothers were working (52.5%) and 19 mothers were not working (47.5%).

Table 4
Frequency distribution of giving Early MPASI to babies aged 0-6 months in Sidokayo Village, Abung Tinggi District, North Lampung Regency in 2023

Early Complementary Breastfeeding	Frequency	Percentage

Given Early MPASI	23	57.5
Not Given Early MPASI	17	42.5

Based on table 4, it can be seen that of the 40 respondents there were 57.5% of mothers who provided Early MPASI and 42.5% of mothers did not provide Early MPASI.

Bivariate Analysis

Table 5
The Relationship between Mother's Knowledge and Providing Early MPASI to Babies Aged 0-6 Months in Sidokayo Village, Abung Tinggi District, North Lampung Regency, 2023

Mother's knowledge	Providing Early Complementary Breastfeeding				Amount		P-Value	OR 95%CI
	Given		Not given					
	n	%	n	%	N	%		
Not enough	17	89.5	2	10.5	19	100%	0.001	8,250
Good	6	28.6	15	71.4	21	100%		

Based on Table 5, it can be concluded that the statistical test results obtained p = 0.001 ≤ α = 0.05, there is a significant relationship between knowledge and giving early MPASI to babies aged 0-6 months using a bivariate test with a p-value of 0.001.

Table 6
Maternal Education by Providing Early MPASI to Babies Aged 0-6 Months in Sidokayo Village, District Abung Tinggi, North Lampung Regency Year 2023

Mother's education	Providing Early Complementary Breastfeeding				Amount		P-Value	OR 95%CI
	Given		Not given					
	n	%	n	%	N	%		
Base education	15	78.9	4	21.1	19	100%	0.022	6,094
Higher education	8	38.1	13	61.9	21	100%		

Based on Table 6, it can be concluded that the results of statistical tests obtained p = 0.022 ≤ α = 0.05, there is a significant relationship between education and giving early MPASI to babies aged 0-6 months using a bivariate test with a p-value of 0.001.

Table 7
The Relationship between Mother's Work and Providing Early MPASI to Babies Aged 0-6 Months in Sidokayo Village, Abung Tinggi District, North Lampung Regency, 2023

Mother's job	Providing Early Complementary Breastfeeding				Amount		P-Value	OR 95%CI
	Given		Not given					
	n	%	n	%	N	%		
Work	15	78.9	4	21.1	19	100%	0.022	6,094
Doesn't work	8	38.1	13	61.9	21	100%		

Based on Table 7, it can be concluded that the results of statistical tests obtained p = 0.022 ≤ α = 0.05, there is a significant relationship between maternal employment and early provision of MPASI to babies aged 0-6 months using a bivariate test with a p-value of 0.022.

DISCUSSION
The Relationship between Knowledge and Providing Early MPASI to Babies Aged 0-6 Months in Sidokayo Village

The research results showed that the statistical test results obtained p = 0.001 ≤ α = 0.05, there was a significant relationship between

knowledge and giving early MPASI to babies aged 0-6 months using a bivariate test with a p-value of 0.001.

The research results above are in line with other research conducted by Nurilma in Babakan Madang District, Bogor Regency in 2020. There are two factors that influence mothers' behavior in providing MP-ASI, namely knowledge and support from those closest to them. Another study that showed the same results was conducted by Kusmiyati in the city of Manado in 2018 with the results that there was a relationship between knowledge and giving MP-ASI with a p-value of 0.005.

A person's knowledge will influence their mindset towards something which ultimately influences behavior change. The higher the knowledge, the more likely the person will pay attention to health problems both for themselves and their family. Therefore, it means that the higher the mother's knowledge, the less likely the mother is to give MPASI to babies aged ≤ 6 months.

According to researchers, knowledge plays a big role in someone taking action. A person's level of knowledge influences the needs of both themselves and others. The majority of mothers with a low level of knowledge will be indifferent to their baby's condition, on the other hand, mothers with a higher level of knowledge will usually be more enthusiastic and really care about their child's condition, both regarding exclusive breastfeeding and complementary feeding. The role of health workers in posyandu activities is very important, so that respondents receive information regarding the provision of health education. The knowledge gained by respondents forms new trust because the information provider is a trustworthy source.

Based on the research results, it is known that as many as 38.1% of respondents had good knowledge but gave early MP_ASI. This could be due to other causes so that the mother did not give MPASI to her baby, such as the mother working or the mother having breast abnormalities so the mother did not breastfeed her baby or there were other factors that were not taken into account. in this research, such as the incessant advertising of formula milk which seems to depict that children's development will be better if they consume formula milk, or the presence of psychological disorders such as fear that breastfeeding will make the breasts less firm or the lack of husband's support, so that health workers provide more accurate information. true to mothers since mothers check themselves during pregnancy, changes in thought patterns and inappropriate lifestyles in mothers who have babies

giving PASI at <6 months of age are also caused by the very intensive promotion of formula milk carried out by manufacturers. This condition requires attention and hard work from health workers in changing the paradigm and increasing public awareness, especially for mothers, through a health promotion service approach regarding the importance of exclusive breastfeeding for babies and as many as 61.9% do not provide MP_ASI

The Relationship between Education and Providing Early MPASI to Babies Aged 0-6 Months in Sidokayo Village

The results of the study showed that p = 0.001 ≤ α = 0.05, there was a significant relationship between education and giving early MPASI to babies aged 0-6 months using a bivariate test with a p-value of 0.001.

Based on the research results, it is known that as many as 89.5% of mothers with basic education have given early MPASI to their children, but as many as 10.5% of respondents did not give early MPASI to their children. According to the researchers, in this study, respondents with low education did not necessarily provide 100% of MPASI to early children, but there were also several factors that influenced mothers to provide early MPASI, such as social culture which had been passed down from generations to generations and was deeply rooted in their families.

Based on the research results, it is known that as many as 28.6% of respondents with higher education have given MPASI to their children. This is because respondents with higher education are more likely to work so that respondents no longer have time to pump breast milk and breast milk production is reduced because respondents have quite high stress, not only at home but also at work and as many as 71.4% do not give early MPASI to their children. This is because respondents already know the impact of giving early MPASI and respondents are also likely not working or if they work have enough time to be able to breastfeed their children first.

The Relationship between Work and Providing Early MPASI to Babies Aged 0-6 Months in Sidokayo Village

The results of the research showed that the statistical test results obtained p = 0.001 ≤ α = 0.05, there was a significant relationship between maternal employment and early provision of MPASI to babies aged 0-6 months using a bivariate test with a p-value of 0.001.

The results of the research show that there is a significant relationship between work and giving

MP ASI to babies aged 0-6 months in Sidokayo Village, Abung Tinggi District, North Lampung Regency in 2023. The results of this research agree with research by Sefaulita (2016) regarding the relationship between mother's work and giving MP-ASI. Early breastfeeding at BPS Ny "M" Wonosari Village, Ngoro Mojokerto District, which shows the results that there is a relationship between mother's work and early MP-ASI provision at BPS Ny "M" Wonosari Village, Ngoro District, Mojokerto. This research is also in accordance with research by Ginting (2018) which shows that there is an influence of employment status on providing early MP-ASI to babies aged < 6 months in the work area of the Barusjahe Community Health Center, Karo Regency, North Sumatra Province.

Based on research results, it is known that as many as 78.9% of mothers who do not work have given early MPASI to their children due to the condition of the mother who is always in a state of stress, sadness, anxiety, lack of self-confidence, which will reduce the volume of breast milk and the mother will be motivated to provide MP-ASI below. 6 months of age to babies to meet the baby's needs and as many as 21.1% of respondents did not give early MP ASI to their children. This is possible because of the support from the family, especially the husband, so that the mother does not feel burdened in caring for the child and breast milk production increases so that the mother no longer worries about the child there will be a lack of food intake. According to researchers, mothers who only work at home and have a lot of time at home do not always provide MP-ASI on time. This is proven by research results where many mothers who work at home or are just housewives have given additional food before the recommended time. . Many mothers who work at home and work outside the home combine breast milk with additional food such as instant porridge, even though the baby is not yet suitable for complementary foods.

Based on the research results, it is known that as many as 38.1% of respondents are working and have given early MPASI to their children. In the researcher's opinion, the high rate of giving early MPASI in Sidokayo Village, Abung Tinggi District could be due to the fact that many working mothers are too busy so that exclusive breastfeeding is hampered so they switching to formula milk or early complementary feeding. The involvement of mothers in earning a living to meet the living needs of their families, especially mothers who are still breastfeeding, causes their babies to not be able to breastfeed properly and regularly. Apart from that, according to researchers, it is possible for a working mother to spend her time in the office, working is also a source of tension and stress. which is great for working mothers. Starting from rigid work regulations, unwise bosses, heavy workloads, perceived injustice in the workplace, colleagues who find it difficult to work together, very long working hours, or even psychological discomfort experienced as a result of socio-political problems. at workplace. This situation will make the mother very tired, while her presence is still eagerly awaited by the family at home. Psychological and physical fatigue often makes them sensitive and emotional, both towards their children and their husbands

Based on the research results, it is known that as many as 61.9% of respondents who work and do not provide early MPASI to their children, according to the researchers' assumptions, respondents who work but do not provide MPASI under the age of 6 months, are due to the mother's location or place of work being close to the neighborhood where she lives, which makes the mother have time to exclusively breastfeed your baby. there were respondents who said they did not provide early MP ASI, this is possible because the mother's job is not tied down, where the mother does not work and has to leave the child from morning to evening, or there are facilities where the mother works so that the mother can pump breast milk and give it to the child and there is a policy from a place where mothers work that allows mothers to go home and give breast milk to their babies, there are many ways that working mothers can continue to give breast milk to their babies, especially if the mother knows that breast milk can be stored in the refrigerator and indoors at the right temperature, The role of health workers is very important to be able to provide correct information to working mothers to continue giving breast milk to their babies for 6 months.

CONCLUSION

Frequency Distribution of Mothers' Knowledge about MPASI, namely poor knowledge, namely 52.5% and good knowledge, 47.5%. Maternal education, namely the number of mothers with primary education, was 47.5% and higher education was 52.5%. Maternal employment, namely the number of mothers who do not work is 47.5% and 52.5% are employed. Providing Early MPASI to babies aged 0-6 months, namely 57.5% of mothers who gave Early MPASI and 42.5% of mothers who did not give Early MPASI to their babies. Based on the results of the bivariate analysis of the relationship between knowledge and early provision of MPASI, the results of statistical tests using Chi Square with SPSS, with the results obtained, namely p = 0.001 ≤

α = 0.05, so H0 is rejected. This means that there is a relationship between knowledge and giving early MPASI to babies aged 0-6 months. Mother's education with giving early MPASI to babies aged 0-6 months. Mother's work with giving early MPASI to babies aged 0-6 months in Sidokayo Village, Abung Tinggi District, North Lampung Regency Year 2023.

SUGGESTION

For Respondents Increased knowledge about the impact of early MP ASI so that it can change mothers' attitudes and behavior in providing MP ASI early. For the research site, there is more participation from health workers in order to improve the health of babies by carrying out baby checks and counseling mothers about providing appropriate MPASI. For educational institutions, it can be developed into further research with independent variables that are different from this research so that it adds reading material and can become learning material for students. For Researchers, it can further increase knowledge for researchers who will conduct research on MPASI with more complex variables, based on other factors, different variables, a larger number of samples, different places, and a more appropriate design so as to increase knowledge, insight and so on. can provide information for further research.

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IDENTIFICATION OF NUTRITIONAL ADEQUACY OF PREGNANT WOMEN WITH THE FIGO NUTRITION CHECKLIST

Dewi Hanifah[1]

[1]D III Midwifery Study Program STIKES Sukabumi, West Java
dewihanifah@dosen.stikesmi.ac.id

ABSTRAK IDENTIFIKASI KECUKUPAN GIZI IBU HAMIL DENGAN DAFTAR PERIKSA GIZI FIGO

Latar Belakang: Gizi dalam kehamilan mempunyai implikasi penting terhadap kesehatan ibu dan anak. Gizi selama kehamilan yang optimal, akan mendorong pertumbuhan dan perkembangan janin yang optimal.

Tujuan: Mengidentifikasi kecukupan zat gizi pada ibu hamil di Puskemas Kota Sukabumi dan mengidentifikasi kelompok ibu hamil yang beresiko mengalami masalah gizi

Metode : Desain penelitian analitik observasional dengan pendekatan *cross sectional* menggunakan data primer dengan mengukur kecukupan gizi ibu hamil dengan instrumen *FIGO Nutrition Checklist*. Sampel dalam penelitian ini sebanyak 65 orang dengan teknik pengambilan sampel menggunakan *consecutive sampling.* Penelitian dilaksanakan di Puskesmas PONED Sukabumi pada bulan Juli – September 2022. Analisis data menggunakan Chi Square.

Hasil: Masih terdapat ibu hamil dengan status gizi kurang (7,7%) dan status gizi lebih (30,8%). Hanya 20% ibu hamil dengan kualitas diet memenuhi indikator instrumen *FIGO Nutrition Checklist*. Variasi jenis makanan yang dikonsumsi ibu hamil belum memenuhi kebutuhan diet yang disarankan. Faktor demografi yang berhubungan dengan kualitas diet adalah pendidikan ibu (p<0,05).

Kesimpulan: Kebutuhan gizi selama kehamilan belum memenuhi indikator *FIGO Nutrition Checklist,* terdapat ibu hamil dengan gangguan nutrisi.

Saran: Perlu dilakukan edukasi gizi terhadap ibu hamil melalui pelayanan antenatal.

Kata Kunci: *FIGO,Nutrition, Checklist*

ABSTRACT

Background: A balanced diet during pregnancy is crucial for optimal fetal growth and development.

Objective: This study aims to assess the nutritional adequacy of pregnant women attending the Sukabumi Public Health Center and identify groups of pregnant women at risk of nutritional problems.

Methods: This observational study used the FIGO Nutrition Checklist to measure the nutritional adequacy of 65 pregnant women at the Sukabumi Public Health Center from July to September 2022, using chi-square for data analysis.

Results: The study found that some pregnant women suffered from undernutrition (7.7%) and overnutrition (30.8%). Only 20% of pregnant women met the indicators of the FIGO Nutrition Checklist instrument, indicating that their diet quality was appropriate. The study also revealed that the variety of foods consumed by pregnant women did not meet the recommended dietary needs. Maternal education was found to be associated with diet quality (p<0.05).

Conclusion: The results suggest that pregnant women's nutritional needs are not being met according to the FIGO Nutrition Checklist indicators, and some women are experiencing nutritional disorders.

Suggestion: It is recommended that antenatal care should include nutrition education for pregnant women to ensure that they receive adequate nutrition during pregnancy.

Keywords: FIGO, Nutrition,Checklist

INTRODUCTION

Nutrition plays a vital role in the health of both the mother and fetus during pregnancy. In Indonesia, pregnant women often suffer from chronic energy deficiency, anemia, and disorders caused by iodine deficiency. (Ernawati, 2017) The prevalence of anemia in pregnant women was 48.9%, and 17.3% experienced Chronic Energy Deficiency according to the 2018 national basic health research. (Badan Penelitian dan Pengembangan Kesehatan

Kementrian Kesehatan RI, 2018) Nutritional deficiency is often linked with high cases of Intra Uterine Growth Restriction (IUGR), low birth weight (LBW), growth disorders, and morbidity. Anemia in pregnant women can result in poor fetal outcomes, such as impaired fetal growth and development, fetal death, and an increased risk of low birth weight, neonatal asphyxia, and high placental weight. (Bora et al., 2014)

Pregnant women need to maintain a proper diet that fulfills their daily requirements for both macro and micronutrients. Failure to do so can lead to potential health risks for both the mother and the baby. Unfortunately, many pregnant women are unaware of these dietary requirements and often do not meet them during pregnancy. (Porteous et al., 2014) In 2015, the International Federation of Gynecology and Obstetrics (FIGO) developed the FIGO Nutrition Checklist, a simple tool to gather data on maternal nutritional adequacy.(Killeen et al., 2020a)

The FIGO Nutrition Checklist is a helpful tool that consists of four question parts. The first part is to identify any special diet habits, such as allergies or vegetarianism. The second part is to obtain your weight, height, and BMI. The third part consists of six questions to assess your diet quality. The fourth part is about identifying any supplement needs, such as folic acid, iron, and sun exposure. This tool can be used to facilitate communication between health workers and mothers before and during pregnancy to ensure adequate nutrition. According to research conducted by Killen et al., the FIGO Nutrition Checklist can be used during antenatal checks. (Killeen et al., 2020a)

It is essential to determine the nutritional adequacy of pregnant women during antenatal care to prevent complications for both the mother and fetus. Antenatal care is a healthcare service provided for expecting mothers by healthcare professionals who follow the standards set by the Midwifery Service Standards. The Sukabumi Public Health Center is one of the healthcare facilities in Sukabumi City with high antenatal care coverage. As per the Maternal and Child Health data recapitulation at the Sukabumi Public Health Center in 2021, the number of pregnant women who received antenatal care was 786.

A preliminary study was conducted on the antenatal services provided at the Sukabumi Public Health Center. Currently, pregnant women's nutritional status is assessed by measuring their body weight, height, body mass index, and upper arm circumference. Additionally, their maternal and child health book records are monitored to ensure they are taking Fe tablets. However, there are no tools used to determine the nutritional intake or diet quality of pregnant women during pregnancy. The most common nutritional problem detected is anemia, with 28 cases recorded in 2021. (Puskesmas Kota Sukabumi, 2021)

In this study, researchers will use the FIGO Nutrition Checklist to identify nutritional adequacy in pregnant women at Sukabumi Public Health Center and identify groups of pregnant women who are at risk of experiencing nutritional problems.

RESEARCH METHODS

This study had an observational analytic design with a cross-sectional approach. It was conducted at the Sukabumi Public Health Center between July 2022 and September 2022. The target population for this research consisted of pregnant women who visited the KIA Polyclinic at the Sukabumi Public Health Center. The sample size for this study was 65 individuals, selected using a consecutive sampling technique.

The research employed the FIGO Nutrition Checklist as the primary instrument. The FIGO Nutrition Checklist is divided into four parts: the first part pertains to the recommended special diet, the second part involves measuring weight, height, and BMI, the third part assesses the quality of the diet through six questions, and the fourth part determines the need for folic acid, iron supplements, and sun exposure.(Killeen, 2020) To evaluate diet quality, participants must answer six questions with a Yes/No response. Those who answered "yes" to all six questions were categorized as having good diet quality, while those who answered "no" to any of the questions were categorized as having poor or risky diet practices. Bivariate analysis with Chi Square was conducted on the diet quality variable to determine its association with respondent characteristics.

RESEARCH RESULTS AND DISCUSSION

Data collection was carried out in July – September 2022 for pregnant women who visited the maternal and child health clinic at the Sukabumi Public Health Center. 65 pregnant women participated in filling out the questionnaire.

Table 1

Sociodemographic Characteristics

Characteristics	n	(%)
Age		
Risky (< 20 years & >35 years)	17	26,2
No risk (20-35 years)	48	73,8
Education		
Low education level, completed junior high school or below	28	43,1
Medium/high school	37	56,9
Economic status		
Low if < Regional Minimum Wage	29	44,6
High, if ≥ Regional Minimum Wage	36	55,4
Gestational Age		
1st Trimester	14	21,5
2nd Trimester	20	30,8
3rd Trimesters	31	47,7
Parity		
Primigravida	22	33,8
Multigravida	43	66,2

According to Table 1, it is evident that 26.2% of the respondents who belong to the risk group (i.e., aged less than 20 years or more than 35 years) are susceptible to complications. A significant proportion (43.1%) of the respondents had a low level of education (completed junior high school or below). Moreover, 44.6% of the respondents belonged to the low economic status category. The respondents' gestational age was classified as first trimester (21.5%), second trimester (30.8%), and third trimester (47.7%), with 33.8% of them being primigravida and 66.2% multigravida.

In this study, none of the pregnant women had special dietary needs.

Nutritional Status

Characteristics	n	(%)
BMI		
Underweight	5	7,7
Normal weight	40	61,5
Overweight	20	30,8

Table 2 displays the nutritional status of pregnant women based on their BMI before pregnancy. Of the total, 40 pregnant women were within the normal BMI range (61.5%), while 20 were overweight (30.8%). The following is information on the quality of pregnant women's diets based on the FIGO Nutrition Checklist.

Table 2

Table 3
Diet Quality Based on Answers of Participating Pregnant Women
(n=65) to the six diet quality questions in the FIGO Nutrition Checklist

Answer Criteria	N	(%)
Answer "Yes" to all six diet quality questions	13	20
Answer "no" to one diet quality questions	19	29,2
Answer "no" to two diet quality questions	15	23,1
Answer "no" to three diet quality questions	14	21,5
Answer "no" to four diet quality questions	3	4,62
Answer "no" to five diet quality questions	1	1,54

Table 3 shows that 13 people (20%) answered "yes" to all of the question items.

Figure 1 Percentage of Diet Quality
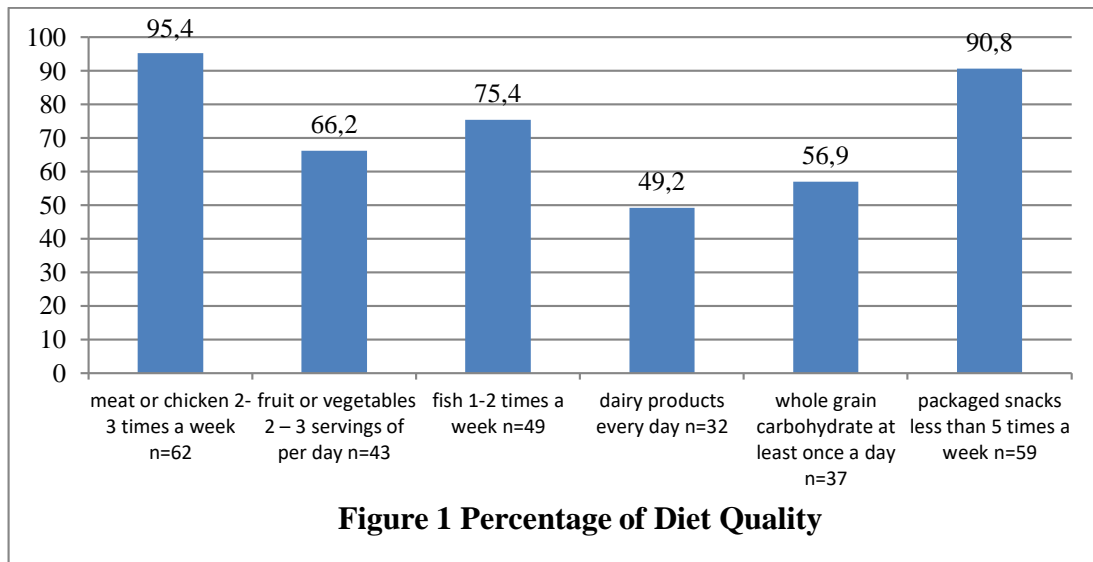
According to the data presented in Figure 1, less than half of pregnant women (49.2%) consume milk products or processed foods daily. Similarly, only 56.9% of pregnant women consume whole grain foods, and only 66.2% of individuals eat more than 2-3 portions of fruits or vegetables per day. Additionally, only 75.4% of pregnant women consume fish at least once or twice a week. On the other hand, almost all pregnant women, that is 95.4% of them, eat meat 2-3 times a week, and 90.8% of them consume cake and snacks.

Table 4 explains that all pregnant women consume folic acid, and 58 people (89.2%) get sun exposure.

Table 5 shows that 37 pregnant women (56.9%) had normal HB (≥ 11 gr%) and 28 pregnant women (43.1%) had HB below 11 gr%.

Table 4
Folic Acid Intake, Sun Exposure

	N	**(%)**
Folic Acid		
Yes	65	100
No	0	
Sun Exposure		
Yes	58	89,2
No	7	10,8

Table 5
HB Levels of Pregnant Women

HB Levels	N	(%)
≥ 11 gr%	37	56,9
< 11 gr%	28	43,1

Table 6
Analysis of Diet Quality Based on Characteristics

Characteristics	Answered "Yes" to all diet quality questions n = 13	Answered "No" to at least one diet quality question n= 52	P value*
Age			
Risky (< 20 years & >35 years)	3	14	1,00
No risk (20-35 years	10	38	
Gestational Age			
1st Trimester	1	13	
2nd Trimester	3	17	0,188
3rd Trimester	9	22	
Education			
Low education level, completed junior high school or	2	26	0,024
below Medium/high school	11	26	
Economic status			

Low if < Regional Minimum Wage	6	23	0,901
High, if ≥ Regional Minimum Wage	7	29	
Parity			
Primipara	6	16	0,336
Multipara	7	36	

P value determined using Pearson Chi-Square test

According to Table 6, there is a significant correlation (p-value <0.05) between education and the quality of pregnant women's diets.

DISCUSSION

The FIGO Nutrition Checklist is a questionnaire designed for women to assess their nutritional status before and during pregnancy. This checklist aims to gather information about weight, dietary habits, and nutritional requirements, which can help healthcare professionals guide pregnant women toward a healthier lifestyle. The checklist also helps identify any nutritional deficiencies or issues that need to be addressed.

A study was conducted to assess the nutritional status of 65 pregnant women who visited the Sukabumi Public Health Center for a month. The FIGO Nutrition Checklist was used for the assessment. The characteristics of the assessed women were as follows: 73.8% were between 20-35 years of age, 56.9% had high school or higher education, 55.4% had high economic status, 21.5% were in their first trimester, 30.8% were in their second trimester, 47.7% were in their third trimester, 33.8% were primigravida, and the rest were multigravida.

The study did not find any evidence of special dietary needs for pregnant women, such as vegetarianism, restrictions on certain foods to control allergies, or diets for managing health conditions like diabetes. However, previous studies have shown that pregnant women may require these types of diets to manage allergies, lactose intolerance, diabetes, hemochromatosis, or irritable bowel syndrome. (Killeen, 2020; Killeen et al., 2020b)

Determining the nutritional status of pregnant women is based on their pre-pregnancy Body Mass Index (BMI). Table 2 presents data on pregnant women with a normal weight of 18.5 to 24.9 (61.5%), an underweight 18.5 (7.7%), and an overweight 25 (30.8%). Knowing your pre-pregnancy BMI is crucial as it reflects your potential nutritional reserves for fetal growth and development. Pregnant women with poor nutritional status have inadequate nutritional stores, and thus need to gain more weight during pregnancy than those who have a normal or obese BMI. (Fikawati, Sandra; Syafiq, Ahmad; Karima, 2018). The FIGO Nutrition Checklist does not include any questions regarding a pregnant woman's weight or the amount of weight she gained during pregnancy. This is significant because weight gain is an important factor in determining nutritional status. Recommended weight gain is based on pre-pregnancy BMI calculations.

During pregnancy, women need to maintain a healthy diet. This means that the diet should provide enough energy to support the growth and development of the fetus, as well as meet the needs of the pregnant woman. Additional energy is required for the synthesis of new tissues such as the fetus, placenta, and amniotic fluid, as well as for the growth of existing tissues such as the uterus, breasts, and maternal adipose tissue. (Williamson, 2006) The FIGO Nutrition Checklist comprises six questions that evaluate the nutritional quality of a pregnant woman's diet. These include consuming meat or chicken twice or thrice a week, consuming more than two to three servings of fruits or vegetables per day, consuming fish at least once or twice a week, having dairy products like milk, cheese, or yogurt every day, consuming whole grain carbohydrate foods like brown bread, brown rice, or chocolate pasta at least once a day, and limiting packaged snacks, cakes, pastries, or sugary drinks to less than five times a week. According to Table 3, out of the 65 respondents, only 13 (20%) answered "yes" to all the questions, while the remaining 80% answered "no" to at least one question. This indicates that a significant majority of pregnant women might have an unsafe diet, specifically those who answered "no" to one or more of the diet quality questions in the FIGO Nutrition Checklist. Figure 1 provides additional insight into the percentage of pregnant women who answered "yes" to each of the six questions individually.

According to this research, out of a total of 65 pregnant women, only 32 (49.2%) reported consuming milk or dairy products daily (as shown in Figure 1). It is worth noting that milk and dairy products are essential sources of nutrients, particularly during certain stages of life. They are the primary food sources of iodine. (Givens, 2020) The need for increased iodine intake during pregnancy is due to higher maternal thyroid hormone production and fetal thyroid hormone synthesis. (Bath & Rayman, 2015) Research conducted in several

countries such as Spain, the Netherlands, Australia, and the UK has discovered a significant link between low iodine levels in mothers during early pregnancy and poor cognitive performance and neurological development in their children. A systematic analysis and meta-review revealed that low maternal iodine levels were linked to a 6.9 to 10.2 IQ point reduction in children under five years old. (Givens, 2020)

According to the research, only 56% of pregnant women consume wheat which is a good source of fiber for the body. This fiber helps to maintain intestinal PH levels and promotes smooth digestion. (Hajhoseini, 2013) It is important to consume fruits and vegetables as they are a good source of fiber. A research study revealed that only 43 out of 65 pregnant women (66.2%) consumed more than 2-3 portions of fruits or vegetables daily. Fiber is a key nutrient that helps prevent digestive tract diseases and cancer. A fiber-rich diet helps in controlling calories and inducing early satiety, which is beneficial for weight loss. During pregnancy, a high-fiber diet is crucial for maternal and fetal health. However, it is suggested to gradually increase fiber consumption, starting with soluble fiber to avoid flatulence. Adequate fiber intake can prevent constipation and hemorrhoids during pregnancy. (Hajhoseini, 2013)

Fiber-rich diet, rich in antioxidants, can help prevent hypertension and preeclampsia during pregnancy and promote fetal development. (James-McAlpine et al., 2020) Nuts, seeds, legumes, fruits, and vegetables can help reduce the risk of cardiovascular disease. (Watanabe et al., 2013)

Fish is an important source of nutrition for pregnant women as it contains iron, omega-3 fatty acids, and protein. However, the research results showed that only 49 out of 65 pregnant women (75.4%) consumed fish 1-2 times a week. Pregnant women must consume an adequate amount of fish to avoid any harm to maternal health and fetal development due to the lack of these essential substances. (James-McAlpine et al., 2020)

Health professionals should follow up on the quality of pregnant women's diets. Insufficient knowledge of dietary recommendations may hinder adherence to nutritional guidelines during pregnancy. (Lee et al., 2018) Verbal communication from healthcare professionals is the most crucial source of nutritional information for pregnant women.

The results of this study contain information about folic acid intake. In Table 4 it can be seen that all pregnant women have received folic acid. Folic acid is a supplement that is essential for pregnant women to prevent neural tube defects. (Argyridis, 2019) Approximately 5% of the general population

has a deficiency in folic acid. Therefore, it is recommended that pregnant women consume 400 mcg/day of folic acid from preconception until 13 weeks of gestation. (Ho et al., 2016)

In Table 4, information on sun exposure is also provided. Of all the pregnant women, 58 (89.2%) received sun exposure. Several studies suggest that sunlight may protect against vitamin D deficiency. (Argyridis, 2019) (Chen et al., 2018)

This study examined the demographic characteristics and quality of the diet among pregnant women. According to Table 6, it was discovered that the quality of diet was related to the educational history of pregnant women. Consistent with earlier research, education can significantly impact a person's mindset, particularly about meeting the nutritional requirements of pregnant women during pregnancy. (Prawitasari Br Hasibuan & Mawarni, 2017)

CONCLUSION

According to the FIGO Nutrition Checklist, some pregnant women experience nutritional disorders. None of them have special dietary needs, but the quality of their diet does not meet the FIGO Nutrition Checklist indicators. All pregnant women consume folic acid, while some of them receive a lot of sun exposure and have hemoglobin levels greater than 11 gr/dl. Furthermore, maternal educational history is found to be related to diet quality.

SUGGESTION

Suggestions for future research include exploring the use of the FIGO Nutrition Checklist instrument in antenatal care. Midwives and other health professionals should provide education on appropriate nutritional intake during pregnancy at each antenatal visit.

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IMPROVING SELF-CARE BEHAVIORS OF PREGNANT WOMEN USING M-HEALTH

Busyra Hanim[1], Anita D. Anwar[2], Vita Muniarti[3]

[1]Bachelor of Midwifery and Midwifery Profession Study Program, Payung Negeri Health Institute, Riau.
[2]Departement of Obstetrics and Gynecology, Faculty of Medicine, Padjadjaran University, West Java
[3]Physiology Departement, Faculty of Medicine, Padjadjaran University, West Java
Email correspondence hanim.busyra@gmail.com

ABSTRAK: PENINGKATAN PERILAKU *SELF-CARE* IBU HAMIL MENGGUNAKAN M-HEALTH

Latar Belakang: Perilaku *self-care* dalam kehamilan berhubungan dengan pengetahuan tentang *self-care* dan efikasi diri. Pengetahuan dan perilaku *self-care* yang kurang baik selama kehamilan dapat membahayakan ibu maupun janin, dan ini menjadi penyebab paling umum kesakitan dan kematian ibu. Salah satu upaya untuk meningkatkan pengetahuan, efikasi diri, dan perilaku *self-care* ibu hamil adalah dengan pemanfaatan m-Health dalam bentuk Aplikasi Sahabat Ibu Hamil (ASIH) berbasis android.

Tujuan: untuk menganalisis pengaruh penggunaan Aplikasi Sahabat Ibu Hamil (ASIH) terhadap peningkatan pengetahuan tentang *self-care*, efikasi diri dan perilaku *self-care* ibu hamil.

Metode: Metode penelitian secara quasi eksperimen dengan *pretest-posttest with control group design.* Subyek penelitian adalah ibu hamil trimester III pada wilayah kerja Puskemas Garuda Kota Bandung sebanyak 60 orang, yang dibagi kedalam kelompok perlakuan yang menggunakan aplikasi Aplikasi Sahabat Ibu Hamil (ASIH) sebagai panduan *self-care* dalam kehamilan dan kelompok control menggunakan Buku KIA. Pengambilan sampel berdasarkan teknik Simple Random Sampling. Instrument yang digunakan adalah lembar kuesioner.

Hasil: Penggunaan aplikasi ASIH berpengaruh meningkatkan pengetahuan ibu hamil dibandingkan dengan yang menggunakan Buku KIA dengan nilai $p<0,05$, nilai RR 2,62(1,39-4,97), dan nilai NTT (*Number Needed to Treat*) 2,30; meningkatkan efikasi diri ibu hamil dibandingkan dengan yang menggunakan Buku KIA dengan nilai $p<0,05$, nilai RR 2,00 (1,14-3,52), dan nilai NTT 3; dan meningkatkan perilaku *self-care* ibu hamil dibandingkan yang menggunakan Buku KIA dengan nilai $p<0,05$, nilai RR 2,75 (1,46-5,17), dan nilai NTT 2,14 yang berarti dibutuhkan 2 orang bu hamil menggunakan aplikasi ASIH untuk meningkatkan perilaku *self-care* 1 orang ibu hamil.

Kesimpulan: Penggunaan Aplikasi Sahabat Ibu Hamil (ASIH) berpengaruh meningkatkan pengetahuan, efikasi diri, dan perilaku *self-care* ibu hamil.

Saran: Tenaga kesehatan perlu melakukan berbagai inovasi untuk mengembangkan teknologi digital guna meningkatkan derajat kesehatan masyarakat.

Kata Kunci: Aplikasi Sahabat Ibu Hamil (ASIH), efikasi diri dalam *self-care*, pengetahuan tentang *self-care*, dan perilaku *self-care* ibu hamil.

ABSTRACT

Background: Self-care behaviour in pregnancy is related to knowledge about self-care and self-efficacy. Poor self-care knowledge and behaviour during pregnancy can harm both mother and fetus, and this is the most common cause of maternal morbidity and mortality. One effort to increase the knowledge, self-efficacy and self-care behaviour of pregnant women is by using m-Health inform of the form of the Android-based Aplikasi Sahabat Ibu Hamil (ASIH) application.

Purpose: to analyse the effect of using the ASIH application on increasing knowledge about self-care, self-efficacy and self-care behaviour of pregnant women.

Method: The research method is quasi-experimental with pretest-posttest with control group design. The research subject were 60 pregnant women in the 3rd trimester in the working area of the Garuda Community Health Center at Bandung, who were divide into a treatment group that used ASIH application as a self-care guide in pregnancy and a control group that used the KIA Book. Sampling was based on the Simple Random Sampling technique. The instrument used is a questionnaire sheet.

Results: The use of ASIH application has the effect of increasing the knowledge of pregnant women compared to those who use KIA Book with a $p<0,05$, an RR value of 2.62 (1.39-4.97), and an NTT (Number Needed to Treat) value of 2.30; increase the self-efficacy of pregnant women compared to control group with a p value <0.05, an RR value of 2.00 (1.14-3.52), and an NTT value of 3; and increase the self-care behaviour of pregnant

women compared to those who use the KIA Book with a p value <0.05, an RR value of 2.75 (1.46-5.17), and an NTT value of 2.14 which means that 2 pregnant women are needed to use ASIH application to improve the self-care behaviour of 1 pregnant women.

Conclution: Using of ASIH application has the effect of increasing the knowledge, self-efficacy and self-care behaviour of pregnant women.

Suggestions: Innovation is needed in health workers to develop digital technology to improve health status.

Keywords: Aplikasi Sahabat Ibu Hamil (ASIH) application, self-efficacy in self- care, knowledge about self-care, and self-care behaviour of pregnant women.

INTRODUCTION

Pregnancy is a normal reproductive process but still requires special self-care so that the mother and fetus are healthy. Ignorance of self-care during pregnancy can harm both the mother and fetus. World Health Organization (WHO) states that health problems during pregnancy and childbirth can be prevented with good self-care behaviour (Zhianian et al., 2015).

Various study results have shown that self-care behaviour in pregnancy can reduce mortality and morbidity, improve quality of life, and reduce care costs during pregnancy, as well as maintain health during pregnancy (Zhianian et al., 2015). Based on data from the 2015 Inter-Census Population Survey (SUPAS), the Maternal Mortality rate (MMR) was 305/100,000 of live birth (KH), and data from the 2017 Indonesian Demographic Health Survey (SDKI), the Infant Mortality rate (IMR) was 24/1000 KH. The target of The Sustainable Development Goals (SDGs) in 2030 is to decrease MMR reaches 70/100,000 KH, while IMR is 12/1000 KH. At 2019 48,9% of pregnant women were suffered from anemia, supported by the low percentage of pregnant women who consume 90 iron tablets during pregnancy, only 33.3%. Anemia in pregnant women is associated with increased premature births, stunting, maternal and neonatal death, and infections. 24.4% of pregnant women got Chronic Energy Deficiency (CED) which at risk of giving birth to low birth weight babies. These risks and complications can be avoided if pregnant women carry out proper self-care during pregnancy (Firmansyah, 2019).

According to Dorothe Orem Theory, self-care behaviour is an active cognitive process that initiates a person to carry out self-care to maintain health or overcoming disease. Actions as self-care efforts are universal, developmental, and health deviation (Muhlisini, 2010). When related to pregnancy care, universal self-care includes meeting the needs of pregnant women in a structures and integrated manner during pregnancy, such as maintaining adequate fluids, rest, activity, travelling, breast care,

preparation for lactation, preparation for childbirth, and family planning; self-care for health deviations includes efforts to manage and treat uncomfortable during pregnancy; and self-care aspects of development include efforts to maintain health and prevent complications due to the development of pregnancy, through early detection of danger signs of pregnancy (Panthumas et al., 2012).

Previous study results explain that factors related to self-care behaviour in pregnancy include knowledge about self-care and self-care efficacy of pregnant women. Panthumas and Puspita's study shows that pregnant women's self-care behaviour was lacking, associates with low knowledge about self-care (Panthumas et al., 2012). The results of the preliminary study showed that 37% of pregnant women said that the information provide by midwives was always the same at every ANC visit, so that 15,2% of pregnant women felt dissatisfied with the information provided by midwives and encouraged the majority of pregnant women (63,2%) to look for better information needed from the internet.

Based on social cognitive theory by Albert Bandura, self-efficacy is a link between knowledge and behaviour, and is a person's belief regarding their ability to behave in a way that influences events that influence their life. Self-efficacy determines how people feel, think, motivate themselves, and behave (Bandura, 1998). Self-efficacy is highly correlated with health behaviour (Zhianian et al., 2015). When someone has high self-efficacy, they will be more enthusiastic in implementing healthy behaviour (Puspita et al., 2015). Preliminary study results show that 50.4% of pregnant women have low self-efficacy for their ability to overcome discomfort during pregnancy, and 34,8% of pregnant women have low self-efficacy for recognizing the danger sign of pregnancy. Therefore, special attention is needed to increase knowledge about self-care and self-efficacy of pregnant women, so that they can carry out good self-care during pregnancy.

One of the government's efforts to encourage the empowerment of women and society is through increasing knowledge behaviour is by implementing

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the Maternal and Child Health Book (KIA) program, which has information, education and communication functions to improve maternal and child health. The KIA book is implemented based on KEPMENKES No. 148/MENKES/SK/2004 (Kurniasari, 2017). Utilization of KIA books has not been maximized, based on the 2018 Riskesdas, the coverage of KIA book ownership was decrease from 80.8% to 75.2%, below the coverage of the at the first ANC visit, and recording service results in the KIA Books was also not optimal, only 10.5% of the KIA Book is completely filled out (Kementerian Kesehatan RI, 2020).

Smartphones are currently a very effective communication tool in health services. Indonesia was the 6th largest number of users smartphone in the world, with the average length of time using android was 5 hours a day. Various application are available and can be operated on a smartphone. This in opportunity to develop mHealth to improve the health of pregnant women (Nurazizah et al., 2023).

Developing mHealth with special components has the opportunity to increase self-efficacy and help change behaviour, as well as provide information that allows a person to determine his or her ability to achieve goal. The use of mHealth as information technology has the opportunity to change healthy behaviour because the device is small, easy to carry, easy to access, makes it possible to manage their own health behaviour, and can be used as often as possible to monitor their involvement in health efforts. Bandura in Maxwell explains that interactive technology is a way creativity that makes it possible to increase one's self-efficacy (Maxwell, 2015).

This study developed mHealth for pregnant women's health services in the form of the Aplikasi Sahabat Ibu Hamil (ASIH) Application. The ASIH applications was designed in an integrated manner for midwives and pregnant women to function as a medium of information, education and communication as a guide for pregnant women in caring for their pregnancy. This application was designed by applying of self-efficacy approach to Bandura's theory, in vicarious experience aspects, verbal persuasion, and physiological feedback. This application contains information about self-care to fulfil mother's need during pregnancy, guides mothers in managing discomfort independently, facilitated to detect signs of danger in pregnancy, and was equipped with a chat feature that pacilitated for interaction between pregnant women with a midwife. This study was conducted to analyse the effect of using the ASIH application on increasing knowledge, self-efficacy and self-care behaviour of pregnant women.

RESEARCH METHODS

This study used a quasi-experimental design with a pretest-posttest with control group design. The study subjects were 60 pregnant women in the third trimester in working area of Garuda public health center in Bandung. All participants were devided into 2 groups, the treatment group that used the ASIH application and the control group that used KIA Book as a self-care guidance in pregnancy. A simple random sampling technique was carried out by midwives who provided antenatal services to separate the participants. The inclusion criteria were the first to third pregnancy, in the third trimester, gestation age 28-32 weeks, aged between 30-34 years, with a minimum of secondary education, own and be able to uses an Android-based smartphone, who had ANC visit in Garuda public health center or Posyandu around Garuda public health center. Exclusion criteria include pregnant women with complications, with a health education background or active participation in health services.

Before the study begun, the ASIH application trial was carried out on users (midwives and pregnant women) and experts. To assess aspects of usability, convenience and satisfaction from the users, and to assess the suitability and feasibility of the application content, trials were carried out by experts from the Indonesian Midwives Association (IBI), obstetrics and gynecology experts and media experts.

The treatment group using the ASIH application as a guide for pregnancy care for 4 weeks. The control group used the KIA book as a pregnancy care guide. Pre-test was carried out to know on knowledge about self-care, self-efficacy and self-care behaviour of pregnant women before using the application and a final assessment (post-test) was carried out after 4 weeks uses of application and KIA book. The study instrument was a questionnaire developed by researchers based on the literature studies. The knowledge questionnaire consists of 36 statements, using the Gutman scale of positive and negative statements with answer choices: 1=true, 0=false. The self-efficacy questionnaire consists of 36 statements using a Likert scale with 4 answer choices: very confident, confident, somewhat confident, and not confident. Self-care behaviour questionnaire with 36 statement using Likert and Gutman scales.

Data processing and analysis used the Chi-Square test with the significance of the test results determined based on a p value <0.05

Finding

Tabel 1
Characteristics of Respondents in Both Groups

Characteristics	Groups		p value
	ASIH (n=30)	Non ASIH (n=30)	
Age (year)			
20-24	9 (30%)	9 (30%)	
25-29	8 (26.7%)	10 (33.3%)	0.823
30-34	13 (43.3%)	11 (36.7%)	
Education			
Midle	24 (80%)	25 (83.3%)	0.500
High	6 (20%)	5 (166.7%)	
Pregnancy			
1st	10 (33.3%)	9 (30%)	
2nd	13 (43.3%)	11 (36.7%)	0.688
3rd	7 (23.3%)	10 (33.3%)	

Based on data table 1, it can be seen that the respondents in the ASIH group were mostly aged between 30-34 years, with secondary education, and in their second pregnancy. It can be seen that the characteristics of respondents in the two group did not show any significant differences.

Based on the results of statistical tests using the Chi-Square test, the p value was greater than 0.05. It can be concluded that the two groups have homogeneous characteristics so they were worthy of comparison.

Tabel 2
Comparison of Knowledge Improvement Categories Between the Two Groups After Using ASIH

Groups	Increased Knowledge		p value	RR (CI 95%)
	Tetap	Increased		
Non ASIH	21 (70%)	9 (30%)	0,001	2,62 (1,39-4,97)
ASIH	8 (26,7%)	22 (73,3%)		

Based on table 2, it can be seen that the increase in the knowledge category has become good in both groups. The results of the Chi-Square test showed that the increase in the knowledge category occurred significantly (p<0.05), the RR value (CI 95%) increased of 2.62, and the NTT value is 2.30. This shows that it takes 2 pregnant women using the ASIH application for 4 weeks to increase knowledge about self-care for 1 pregnant women.

Tabel 3
Comparison of Self-Effication Improvement Categories Between the Two Groups After Using ASIH

Groups	Increased Sef-Effication		p value	RR (CI 95%)
	Tetap	Increased		
Non ASIH	20 (66.7%)	10 (33.3%)	0,010	2.00 (1.14-3.52)
ASIH	10 (33.3%)	20 (66.7%)		

Based on table 4, using the Chi-Square test, it can be seen that the increase in self-efficacy category between two groups is significantly different (p<0.05), the RR value (95% CI) is 2.00, and the NTT value is 3.00. it was show that it takes 3 pregnant women using the ASIH application for 4 weeks to increase the self-efficacy of 1 pregnant women.

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Tabel 4

Comparison of Self-Care Improvement Categories Between the Two Groups After Using ASIH

Groups	Increased of self-care		p value	RR (CI 95%)
	Tetap	Increased		
Non ASIH	22 (73.3%)	8 (26.7%)	<0,001	2,75 (1,46-5,17)
ASIH	8 (26.7%)	22 (73,3%)		

Based on table 5 using the Chi-Square test, the self-care behaviour of pregnant women increased in both groups with significant difference, indicated by a p value greater than 0.05 (p<0.001).

The RR (CI 95%) was 2.75, and NNT value was 2.14, this shows that it takes 2 pregnant women using the ASIH application for 4 weeks to improve the self-care behavior of 1 pregnant women.

Tabel 5

Relationship between respondent Characteristics and Knowledge, Self-Efficacy, and Self-Care Behavior

Characteristics	Percentage increase in knowledge, self-efficacy, dan self-care behavior								
	Knowledge			Self-Efficacy			Self-Care Behaviour		
	ASIH	Non ASIH	p value	ASIH	Non ASIH	p value	ASIH	Non ASIH	p value
Age (year)									
20-24									
Mean	32,9	8,7	0,008	15,9	5,4	0,136	12,2	7,1	0,605
Median	24,9	3,4		18,2	2,4		7,6	7,5	
25-29									
Mean	28,6	15,8	0,360	30,5	13,6	0,21	14,1	6,0	0,16
Median	14,7	8,9		25,5	7,0		12,4	5,0	
30-34									
Mean	23,5	10,9	0,360	17,4	11,4	0,361	18,3	-0,3	0,002
Median	16,6	7,4		14,9	3,4		16,9	-2,1	
Education									
Midle			0,003			0,007			0,004
Mean	30,4	11,6		19,6	9,7		13,7	3,6	
Median	20,3	7,1		20,9	3,8		14,1	3,4	
High			0,662			0,429			0,52
Mean	16,7	13,5		23,9	3,6		22,0	5,9	
Median	16,3	3,5		27,2	3,4		19,8	1,8	
Pregnancy									
Ke-1									
Mean	29,9	11,4	0,79	25,9	15,5	0,79	10,8	5,1	0,447
Median	22,1	6,9		26,9	10,3		7,1	4,9	
Ke-2									
Mean	30,8	6,3	0,002	20,5	2,6	0,007	18,2	5,1	0,006
Median	16,7	3,3		19,7	1		16,8	2,8	
Ke-3									
Mean	18,6	18,5	0,669	12,8	14,1	1,000	16,6	1,8	0,19
Median	16,7	13,4		18,8	10,9		16,9	1,8	

Based on table 5, using the Mann-Whitney test, it found that for the characteristics aged 20-24 years, using ASIH application increased knowledge significantly (p<0.05), while a significant increase in self-care behaviour occurred in pregnant women aged 30-34 years. In the caracteristics of secondary education, the use of ASIH application increased knowledge, self-efficacy, and self-care behaviour of pregnant women significantly (p<0.05). From the characteristics of the second pregnancy, the use of the ASIH application increases knowledge, self-efficacy and self-care behaviour in all groups of

pregnant women. A significant increase in knowledge, self-efficacy and self-care behaviour was

found in mothers with their second pregnancy (p<0.05).

Tabel 6
Comparison of Knowledge, Self-Efficacy and Self-Care Behavior Scores before and after intervention in the two groups

Variable	Groups		p value
	ASIH	**Non ASIH**	
Knowledge			
Pre-test			0,666
Mean	76,48	76,85	
Median	77,78	77,78	
Range	41,67 - 88,89	44,44 - 91,67	
Post-test			0,001
Mean	93,98	84,91	
Median	94,44	86,11	
Range	86,11 – 100	66,67 - 91,67	
Comparison *pre-test* and *post-test*	p<0,001	p <0,001	0,002
Increasing (%)	18,0%	7%	
Self-Efficacy			
Pretest			0,684
Mean	70,8	70,22	
Median	68,98	68,06	
Range	52,78 - 94,44	48,15 - 96,3	
Posttest			<0,001
Rata-rata	93,98	84,91	
Median	94,44	86,11	
Range	86,11 – 100	66,67 - 91,67	
Comparison *pre-test* dan *post-test*	p<0,001	p<0,001	0,007
Increasing (%)	20,9%	3,7%	
Self-care behaviour			
Pre-test			0,415
Mean	73,71	72,35	
Median	72,78	72,14	
Range	63,02 - 87,14	59,52 - 94,29	
Post-test			<0,001
Mean	84,53	74,89	
Median	84,76	75,08	
Range	75,87 - 96,83	63,49 - 88,57	
Comparison *pre-test* dan *post-test*	p<0,001	p=0,036	<0,001
Increasing (%)	15,4	4,0	

Based on table 6, the results of the Mann-Whitney test, Wilcoxon test, T test, and paired T test showed an increase in the mean, median, and range of scores for knowledge, self-efficacy, and self-care behaviour after treatment in both groups. The different in improvement between the treatment group and the control group occurred significantly (p<0.05).

DISCUSSION

The effect of using the ASIH application on increasing knowledge about self-care for pregnant women

Using ASIH application in this study has a significant role in increasing knowledge about self-care for pregnant women. Based on the statistical test results in Table 6, the pre-test knowledge scores of respondents in the two groups did not show significant differences, it was mean that the initial condition of knowledge about self-care in pregnancy in both groups was the same. In contrast to the post-

test results, after treatment there was a significant increase in the average, median and range of knowledge scores for the treatment and control groups with p<0.05. the increase in knowledge between the group that used the ASIH application and the non-ASIH group showed a significant difference (p = 0.002).

This study results were supported by study of Zhianian (2015) which found that providing health education programs by applying self-efficacy theory was effective in increasing pregnant women's knowledge about self-care behaviour. The use of media helps clarify the information conveyed, is more interesting, more interactive, can overcome the limitations of space and time. The use of the Android-based ASIH application functions as an educational medium about self-care in pregnancy which makes it easy to obtain information about self-care thereby increasing pregnant women's knowledge (Zhianian et al., 2015).

The use of KIA Books as print media has limitations, including taking a long time, being tedious, and can be lost and damaged. Sistiarani's study found that the use of MCH Books does not necessarily increase mother's knowledge, around 40% of mothers have never read or read only a small potion, among mothers who had read, 22.4% said they found it difficult to understand the MCH Book (Sistiarani, 2014). Supported by Kusindijah's study, there was no relationship between ownership of the KIA book and pregnant women's knowledge about self-care (Kusindijah, 2012).

The effect of using the ASIH application on increasing the self-efficacy of pregnant women

The ASIH application used as a guide for pregnant women in carrying out self-care during pregnancy in this study has a significant role in increasing the self-efficacy of pregnant women. In this study, the self-efficacy of pregnant women who used the ASIH application got a significant increase compared to pregnant women who did not use the ASIH application.

The results of this study were in accordance with study by Zianian (2015) which shows that providing health education programs by applying efficacy theory significantly increases the self-efficacy of the participants (Zhianian et al., 2015). Supported by the results of meta-analysis studies which show the potential for using m-Health to strengthen and increase self-efficacy and influence behaviour change, increasing healthy living behaviour in preventing or managing disease.

Based on social cognitive theory which developed by Albert bandura, it was explained that self-efficacy is a link between knowledge and behaviour. Self-efficacy determines how a person feels, thinks, motivates himself, and behaves. Self-efficacy theory promoted the empowerment of pregnant mothers and improve their performance in self-care behaviour during pregnancy (Bandura, 2005).

Increased self-efficacy of pregnant women is supported by increased knowledge about self-care in pregnancy (Table 6), vicarious experience (imitation), and verbal persuasion (verbal reinforcement) that mothers got when interacting with fellow pregnant women or with midwives in carrying out self-care by using the android-based ASIH application. Different from the use of KIA book, it did not support the sources of self-efficacy from the aspects of vicarious experience, verbal persuasion and physiological information. When the women had questions or concern about the condition of teir pregnancy, these cannot be resolved immediately. Interaction with midwives and other pregnant women can only be done when the mother attends a antenatal class or during her next ANC visit to the community health center or posyandu.

The effect of using the ASIH application on increasing the self-care behaviour of pregnant women

The use of ASIH application contributed to increasing the self-care behaviour of pregnant women by 15,4% (Table 6) compared to 4% in the control group. Pregnant women who do not use the ASIH application as a self-care guide in pregnancy have a risk of self-care behaviour that is 2.75 times less when compared to pregnant women who use the ASIH application.

These results are supported by the study of Zhianian (2015), finding that providing health education programs by applying efficacy theory significantly increases the self-care behaviour or pregnant women. The increase in self-care behaviour of pregnant women in this study may be supported by increased knowledge and increased self-efficacy in self-care after using the ASIH application. Self-efficacy is a link between knowledge and behaviour. Self-efficacy influences human actions through cognitive process, motivation, affection and selection processes. Cognitive processes with increasing knowledge about an object underlie the formation between the use of health technology and change in healthy living behaviour. The use of health technology with certain content provides opportunities to increase knowledge and self-management in healthy behaviour which facilitates increasing the self-

efficacy of pregnant women to carry out self-care behaviour.

Based on Table 6, it can be seen that the control group's self-care behaviour increased by 4% compared to the treatment groups 15.4%. This finding was in line with the results study of Kusindijah, who found that ownership of the KIA book was not related prenatal care. It was found that only 15.8% of pregnant women who had MCH books carried out good pregnancy care. This finding shows that the information in the KIA book does not settle into memory and knowledge. It possible that a deep impression was not formed on the KIA book information so that they did not feel motivated to make it necessary part and implement.

Supported by the results of a systematic review by Jessica (2015) that interventions in the form of effective use of m-health have had a positive impact on changing the behaviour of patients and health workers. By providing short massages (SMS) as reminders and health education on mothers' mobile phone, it has been proven to significantly increase ANC visits in the treatment group (p<0.002), and increase timely immunization (p<0.01) (Fanning et al., 2012). The self-efficacy and increased attention to the important predictors of health behaviors adoption by pregnant women was appropriated (Zhianian et al., 2015). Several countries have developed self-care applications to make it easier for pregnant women to access various information related to their pregnancy while increasing the ability of others to maintain their health (Nurazizah et al., 2023). Review by Stephen noted that e-Health and m-Health are the only forms of self-monitoring that have been explore from the perspective of midwives in academic sphere (Vickery et al., 2020).

CONCLUSION

In this study, the use of m-Health by applying self-efficacy theory can significantly increase knowledge about self-care, self-efficacy in self- care and self-care behaviour of pregnant women. Innovation by developing m-Health with content of information about self-care in pregnancy, facititate pregnant women to interact and communicate with other pregnant women and midwives so that can carry out independent care at home to maintain and improve their health.

The strong points in this study were: Used of self-efficacy theory in promote to empowerment the pregnant women and improve their performance practice self-care behaviour during pregnancy; used smartphone as media that own by large number of people pregnant women, used large number of time that used a day.

It is recommended that health workers need to carry out various innovations to develop digital technology to improve the health status of pregnant women which is integrated with health workers who provide services so that they can monitor the mother's health condition at each antenatal care visit.

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KNOWLEDGE, COMMUNITY BEHAVIOR, AND ENVIRONMENTAL FACTORS IN RELATION TO THE INCIDENCE OF DENGUE HEMORRHAGIC FEVER

Devita Febriani Putri[1*], Tusy Triwahyuni[2], Tommy Dias Rahmadhany[3], T Marwan Nusri[4]

[1,2]Departement of Parasitology, Faculty of Medicine, Malahayati University, Lampung
[3]Study Program of Medical Education, Faculty of Medicine, Malahayati University, Lampung
[4]Departement of Community Medicine, Faculty of Medicine, Malahayati University, Lampung
Email correspondence: devita@malahayati.ac.id

ABSTRAK PENGETAHUAN, PERILAKU MASYARAKAT DAN FAKTOR LINGKUNGAN DENGAN KEJADIAN DEMAM BERDARAH DENGUE

Latar Belakang :   Demam Berdarah Dengue (DBD) merupakan salah satu penyakit tular vektor yang terkenal di Indonesia dengan tingkat endemisitas yang tinggi. Strategi dengan metode berbasis pemberdayaan serta melibatkan masyarakat secara berkelanjutan, merupakan cara efektif untuk mengendalikan DBD. Pemahaman masyarakat tentang kejadian DBD, perilaku cara menanganinya dan pencegahan kontak dengan vektor DBD serta faktor lingkungan antara lain perilaku menggantung pakaian, ketersediaan tutup pada kontainer, serta ketersediaan kawat kassa memberikan pengaruh signifikan dalam pengendalian DBD. Hasil pre survey awal di Puskesmas Panongan Kabupaten Tangerang didapatkan informasi masih terbatasnya masyarakat lokal memahami faktor – faktor tersebut.

Tujuan : Mengetahui pengaruh pengetahuan, perilaku (memakai lotion anti nyamuk, memakai kelambu) dan faktor lingkungan (Menggantung pakaian, ketersediaan kawat kassa, dan Ketersediaan tutup kontainer) terhadap kejadian DBD di wilayah kerja Puskesmas Panongan,Kabupaten Tangerang, Banten.

Metode : Jenis penelitian adalah penelitian kuantitatif obsevasional dengan rancangan penelitian cross sectional. Jumlah sampel penelitian 80 responden penelitian dengan pengambilan sampel menggunakan cluster sampling, yang terdiri dari dua kelompok desa yaitu Desa Mekar Bakti dan Desa Ciakar. Instrumen penelitian menggunakan kuisioner dan lembar observasi.

Hasil penelitian : Karakteristik responden penelitian, dari 80 orang, mayoritas responden berjenis kelamin perempuan sebanyak 54 orang (67,5%), berusia 21- 30 tahun sebanyak 32 orang (40%), memiliki pekerjaan sebagai pegawai swasta 44 orang (55%), dengan lulusan SMA sebanyak 52 orang (62%). Responden yang memiliki pengetahuan baik tentang DBD di wilayah Puskesmas Panongan Kabupaten Tangerang sebanyak 59 orang (73,75%), perilaku baik memakai lotion anti nyamuk sebanyak 41 orang (51.3%), perilaku pemakaian kelambu baik sebanyak 51 orang (63.8%), perilaku baik menggantung pakaian sebanyak 51 orang (65%). Hasil observasi menyatakan 55 orang responden (68.8%) memiliki rumah dalam kondisi baik dengan tersedianya kawat kassa dan 67 orang (83.8%) memiliki tutup pada kontainer pada setiap rumahnya.

Kesimpulan : Diketahui distribusi kejadian DBD di wilayah Puskesmas Panongan sebanyak 65 kasus (81,25%). Perilaku menggantung pakaian berhubungan dengan kejadian DBD di wilayah Puskesmas Panongan Tangerang dengan nilai p value = 0,035 dan nilai OR sebesar 3,632, sedangkan pengetahuan, perilaku memakai lotion anti nyamuk, perilaku memakai kelambu, serta faktor lingkungan ketersedian kawat kassa dan tutup kontainer pada rumah warga, tidak memiliki hubungan yang bermakna dengan kejadian DBD.

Saran : Penyuluhan dan upaya promotif dari instansi kesehatan pemerintah lebih ditingkatkan dan diperjelas dalam metode penyampaian serta meninjau kembali upaya penanggulangan dan pemberantasan DBD pada peningkatan peran masyarakat melalui kegiatan pemberdayaan. Bagi masyarakat, Gerakan PSN lebih ditingkatkan lagi dengan kerja bakti membersihkan lingkungan sekitar guna memutus rantai penularan DBD.

Kata kunci : Demam Berdarah Dengue, Pengetahuan, Faktor Lingkungan, Perilaku Masyarakat

ABSTRACT

Background: Dengue Hemorrhagic Fever (DHF) stands out as a prominent vector-borne disease in Indonesia, characterized by a high level of endemicity. A strategy grounded in empowerment and continuous community involvement proves to be an effective approach for the control of dengue fever. Public comprehension of the prevalence of dengue fever, the adoption of appropriate behaviors to manage it, and the prevention of contact with dengue vectors, as well as environmental factors such as hanging clothes, the availability of lids on containers,

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and the availability of wire mesh wield a substantial impact on the control measures for dengue fever. The findings of pre-survey conducted at Puskesmas Panongan in Tangerang, limited understanding of these factors among local communities.

Purpose: The purpose of research to ascertain the impact of knowledge, behavior, and environmental factors on the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten.

Methods: The research conducted adopted a quantitative observational with the research design was cross-sectional. The total research sample was 80 respondents with the sampling technique used was cluster sampling which included two groups of villages, namely Mekar Bakti Village and Ciakar Village. The research instrument used a questionnaire and observation sheet.

Results: Characteristics of research respondents, it is evident that out of the total sample of 80 respondents within the working area of Puskesmas Panongan in Tangerang, Banten, 54 respondents or 67.5% are females, and 32 respondents fall within the age range of 21-30 years (40%). Among those, 44 respondents (55%) are employed as private employees, and 52 respondents (62%) have high school degrees. Notably, 59 respondents (73.75%) demonstrated good knowledge about dengue fever, 41 respondents (51.3%) demonstrated good behavior in using anti-mosquito lotion, 51 respondents (63.8%) demonstrated good behavior in using mosquito nets, and 51 respondents (65%) demonstrated good behavior in hanging clothes. The observational findings further revealed that 55 respondents (68.8%) resided in houses with wire mesh, indicating good living conditions, and 67 respondents (83.8%) had lids on containers within their houses.

Conclusion: Based on the study results, it is evident that the distribution of dengue fever cases in the woking area of Puskesmas Panongan is 65 cases (81.25%). The behavior in hanging clothes is found to be related to the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten with a p value = 0.035 and an OR value of 3.632. However, knowledge, the behavior of using anti-mosquito lotion, the behavior of using mosquito nets, as well as environmental factors such as the availability of wire mesh and container lids in residents' houses, did not exhibit a significant relationship with the incidence of dengue fever.

Suggestion : Counseling and promotional efforts from government health agencies should be improved in delivery methods. Further clarity is needed in reviewing efforts to control and eradicate dengue fever, emphasizing the importance of increasing the community's role through empowerment activities. For the community, the PSN Movement is strengthened by engaging in community service to clean the surrounding environment, aiming to break the chain of dengue transmissio

Keywords: Dengue Hemorrhagic Fever, Knowledge, Environmental Factors, Community Behavior.

INTRODUCTION

Indonesia, being a tropical country, serves as an endemic region for various infectious diseases. Based on the process of occurrence, infectious diseases can be categorized into endemic infectious diseases and those with the potential to escalate into outbreaks, constituting extraordinary events. Dengue Hemorrhagic Fever (DHF) stands out as a prominent vector-borne disease in Indonesia, characterized by a high level of endemicity. DHF is attributed to the dengue virus, a member of the Arthropod-Borne Virus within the Flavivirus genus and Flaviviridae family. Transmission occurs through the Aedes genus mosquito vector, notably *Ae. aegypti*, with the disease manifesting throughout the year and affecting individuals across all age groups. The onset and prevalence of DHF are intricately linked to environmental conditions and community behavior (Utama et al., 2019; Tuiskunen Bäck and Lundkvist, 2013; Kemenkes, 2020).

The Ministry of Health of the Republic of Indonesia (Kemenkes RI), in collaboration with the World Health Organization (WHO) Country Office Indonesia, introduced the National Strategic Program for the Dengue Fever Control Program (2021-2025). Two primary indicators within the NSP pertain to the burden of dengue infection: the percentage of regencies/municipalities with an incidence rate among the population and a case fatality rate. The national target by 2025 is for 90% of regencies/municipalities to achieve an incidence rate below 49/100,000 and a case fatality rate of 0.5%. To realize this ambitious target, six strategies have been outlined: enhancing effective, safe, and sustainable vector management; improving access to and the quality of dengue case management; reinforcing comprehensive dengue surveillance and responsive outbreak management; enhancing ongoing community involvement; fortifying government commitment, policy, program management, and partnerships; and augmenting assessment, invention, innovation, and research as the foundation for evidence-based policy and program management (WHO, 2021). Vector control and the promotion of

sustainable community involvement emerge as pivotal and efficacious strategies in the comprehensive control of dengue cases (Putri et. al., 2023a)

A strategy grounded in empowerment and continuous community involvement proves to be an effective approach for the control of dengue fever. Public comprehension of the prevalence of dengue fever, the adoption of appropriate behaviors to manage it, and the prevention of contact with dengue vectors wield a substantial impact on the control measures for dengue fever (Putri et al., 2021). The Indonesian government, operating through the Health Service, has actively disseminated information to the public regarding initiatives aimed at vector control for dengue hemorrhagic fever, encouraging independent community efforts at the household level. This initiative is recognized as the Eradicating Mosquito Nests by Covering, Draining, and Recycling Plus (PSN 3M Plus) program (Priesley et al., 2018). Environmental factors also play a crucial role in influencing the incidence of dengue hemorrhagic fever. These factors encompass behaviors such as hanging clothes, the availability of lids on containers, and the availability of wire mesh (Ayun and Pawenang, 2017; Apriliana, et al,. 2018; Mahardika, 2021; Latif et al., 2021; Nisa and Siwiendrayanti, 2022; Siyam et al., 2023).

The initial instances of dengue fever in Indonesia were documented in 1968 in Surabaya and Jakarta, involving 48 individuals with a case fatality rate (CFR) of 41.4%. In tandem with the escalating mobility and population density in Indonesia, there has been a consistent rise in both the number of dengue fever cases and their geographical spread. In 2019, the number of dengue fever sufferers was reported to have reached 138,127 cases throughout Indonesia, signifying a significant increase from 2018. In that year there were 919 deaths or a CFR of 0.67% in Indonesia. Banten Province has a fairly high CFR, namely 0.48%, with an Incidance Rate (IR) of 22.55 per 100,000 population (Kemenkes, 2020). Based on Tangerang Regency Sectoral Statistics data (2021), the highest cases were in the Puskesmas Panongan working area, namely 93 cases of dengue fever, after the Puskesmas Kelapa Dua and the Puskesmas Balaraja (Depkominfo Tangerang Regency, 2021).

The findings of pre-survey conducted at Puskesmas Panongan in Tangerang revealed a dearth of health education regarding dengue fever, resulting in a limited understanding of its symptoms

and management among the local populace. Both hamlet heads and neighborhood leaders rarely initiated collaborative efforts within hamlets or neighborhoods, leading to infrequent environmental clean-up activities. Health workers predominantly engaged in fogging only after individuals had already contracted dengue fever, with limited emphasis on preventive measures. The community exhibited a lack of awareness in averting contact with dengue vectors, displaying a reluctance to employ anti-mosquito measures, and adhering to the habit of drying clothes indoors. Routine drainage of water reservoirs within the community was not consistently practiced, and some individuals cleaned their water reservoirs or containers merely once a month. Based on these findings, it is imperative to conduct further research to ascertain the impact of knowledge, behavior, and environmental factors on the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten.

RESEARCH METHODS

The research conducted adopted a quantitative observational approach, focusing on the quantitative measurement of various characteristics (variables) through direct observations. The research design was cross-sectional, involving simultaneous sampling of independent and dependent variables. The research was conducted in February 2021 within the working area of Puskesmas Panongan in Tangerang, Banten.

Cluster sampling was employed as the sampling technique, encompassing two village groups, namely Mekar Bakti Village and Ciakar Village. The sample size, determined using the Slovin formula, was set at 80 individuals. Sampling involved the distribution of questionnaires, interviews with respondents, and direct observations conducted at the respondents' houses. The questionnaire instrument comprised 35 questions, covering variables such as knowledge, behaviors (including the use of anti-mosquito lotion, mosquito nets, and hanging clothes), and environmental factors (specifically, the availability of wire mesh and container lids). Characteristics of the respondents, including gender, age, education, occupation, and the incidence of dengue fever, were extracted from the respondent's observation sheet and medical records. Ethical approval for this research was obtained from the Research Ethics Commission of Universitas Malahayati, with reference number 1627/EC/KEP-UNMAL/III/2021.

RESEARCH RESULTS

Table 1
Characteristics of Respondents (n=80)

Characteristics	Categories	Frequency	
		n	%
Gender	Male	26	32.5
	Female	54	67.5
Age	10-20 years	2	2.5
	21-30 years	32	40
	31-40 years	26	32.5
	41-50 years	14	17.5
	> 51 years	6	7.5
Education	Not completed Elementary School	1	1.25
	Elementary School	1	1.25
	Junior High School	11	13.75
	Senior High School	52	65
	University	15	18.75
Occupation	Household assistant	4	5
	Laborer	1	1.25
	Farmer	1	1.25
	Private employees	44	55
	Civil servants	5	6.25
	Not working	25	31.25
Incidence of dengue fever	No	15	18.75
	Yes	65	81.25
Knowledge	Good	59	73.75
	Poor	21	26.25
Use of anti-mosquito lotion	Good	41	51.25
	Poor	39	48.75
Use of mosquito nets	Good	51	63.25
	Poor	29	36.75
Hanging Clothes	Good	52	65
	Poor	28	35
Availability of Wire Mesh	Good	55	68.75
	Poor	25	31.25
Container Lids	Good	67	83.75
	Poor	13	16.25

Based on the data presented in Table 1, it is evident that out of the total sample of 80 respondents within the working area of Puskesmas Panongan in Tangerang, Banten, 54 respondents or 67.5% are females, and 32 respondents fall within the age range of 21-30 years (40%). Among those, 44 respondents (55%) are employed as private employees, and 52 respondents (62%) have high school degrees. Notably, 59 respondents (73.75%) demonstrated good knowledge about dengue fever, while 21 respondents (26.25%) demonstrated poor knowledge.

Examining the frequency distribution based on independent variables, it was observed that 41 respondents (51.3%) demonstrated good behavior in using anti-mosquito lotion, 51 respondents (63.8%) demonstrated good behavior in using mosquito nets, and 51 respondents (65%) demonstrated good behavior in hanging clothes. The observational findings further revealed that 55 respondents (68.8%) resided in houses with wire mesh, indicating good living conditions, and 67 respondents (83.8%) had lids on containers within their houses. Interestingly, this contrasts with the incidence of dengue fever in within the working area of Puskesmas Panongan in Tangerang, Banten, where 65 respondents (81.25%) had experienced dengue fever, while 15 respondents (18.25%) had never been infected.

Table 2
Factors Related to the Incidence of Dengue Hemorrhagic Fever (n=80)

Variable	Incidence of Dengue Hemorrhagic Fever (n/%)		P value	OR (95 % CI)
	Non-DHF (n=15)	Dengue fever (n=65)		
Knowledge about dengue fever				
Good	13/22	46/78	0.331	0.372 (0.077-1.811)
Poor	2/9.9	19/90.1		
Behavior of using anti-mosquito lotion				
Good	10/24.4	31/75.6	0.254	0.456 (0.140-1.482)
Poor	5/12.8	34/87.2		
Behavior of using mosquito nets				
Good	8/15.7	43/84.3	0.383	1.710 (0.549-5.332)
Poor	7/24.1	22/75.9		
Behavior in hanging clothes				
Good	6/11.5	46/87.5	0.035	3.632 (1.135-11.620)
Poor	9/32.1	19/67.8		
Availability of wire mesh				
Good	9/16.4	46/83.6	0.538	1.614 (0.504-5.165)
Poor	6/24	19/76		
Availability of container lids				
Good	13/19.4	54/80.6	1,000	0.755 (0.149-3.831)
Poor	2/15.4	11/84.6		

Table 2 reveals that among the 59 respondents with good knowledge about dengue fever, 46 respondents (78%) had experienced dengue fever, whereas 2 respondents with poor knowledge had never been infected. The statistical test results for the knowledge variable in relation to the incidence of dengue fever yielded a p-value of 0.331 (p>0.05), signifying an absence of a significant relationship between knowledge and the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten.

Furthermore, it is noted that out of the 41 respondents who demonstrated good behavior in using anti-mosquito lotion, 31 respondents (75.6%) had experienced dengue fever. Similarly, for the variable of behavior in using mosquito nets, 43 respondents (84.3%) with good behavior, had experienced dengue fever. The statistical test results for these two behavioral variables yielded values above 0.05 (p>0.05), indicating that the behaviors of using anti-mosquito lotion and using mosquito nets are not significantly related to the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten.

The variable of behavior in hanging clothes, as shown in Table 2, indicates that out of the 52 respondents who demonstrated good behavior in hanging clothes, 46 respondents (87.5%) had experienced dengue fever. However, the statistical test results for this behavioral variable in relation to the incidence of dengue fever yielded a p-value of 0.035 (p < 0.05), indicating a significant relationship between the behavior in hanging clothes and the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten. The Odds Ratio was found to be 3.632, suggesting that the behavior in hanging clothes is a risk factor for the incidence of dengue fever. Respondents who demonstrate poor behavior in terms of hanging clothes have a 3.632 times greater risk of experiencing dengue fever compared to those who demonstrate good behavior in terms of hanging clothes.

The last two independent variables, namely environmental factors—availability of wire mesh and availability of container lids in the respondents' houses—reveal that out of the 55 respondents whose houses were equipped with wire mesh, 46 respondents (83.65%) had experienced dengue fever. Similarly, among the 67 respondents whose houses had proper container lids, 54 respondents (80.6%) had experienced dengue fever. The statistical test results for these two environmental variables indicate that there is no significant relationship with the incidence of dengue fever (p > 0.05).

DISCUSSION

Knowledge about Dengue Hemorrhagic Fever

Based on the results of statistical tests, the obtained p-value was 0.331 (p > 0.05), signifying that there is no significant relationship between knowledge and the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten. These results do not align with a study conducted by Putri et al. (2023b), which reported a relationship between knowledge and the incidence of dengue fever within the working area of Puskesmas Sukarame in Bandar Lampung, with a p-value of 0.037. In that study, respondents with a low level of knowledge had a 2 times higher chance of contracting dengue fever compared to respondents with a high level of knowledge (OR = 2.586). Another study within the working area of Puskesmas Way Kandis in Bandar Lampung conducted by Husna et al. (2020) also indicated that knowledge was a factor related to the incidence of dengue fever (p-value 0.02), with an OR value of 0.40, suggesting that respondents with good knowledge had a risk 2.5 times less likely to suffer from dengue fever compared to respondents with poor knowledge about dengue fever.

As a result of the questionnaire and direct observations conducted by researchers, it was found that good knowledge among the majority of Puskesmas Panongan community did not translate into action in tackling dengue fever. The characteristics of well-informed and highly educated respondents do not consistently determine better awareness of action regarding dengue prevention efforts. Instead, it is more likely that respondents with lower education levels demonstrate higher awareness of action. The study results indicate that high knowledge had no tangible effect on the incidence of dengue fever. These results align with the studies conducted by Retang et al. (2021) and Ardayabi et al. (2022), both of which concluded that public knowledge had no effect on the incidence of dengue fever.

Behavior of Using Anti-Mosquito Lotion with the Incident of Dengue Hemorrhagic Fever

The study results indicate that the behavior of using anti-mosquito lotion is not related to the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten, with a p-value of 0.254. These results are consistent with a study conducted by Agustina (2011), which obtained a p-value of 0.708, suggesting no relationship between the habit of using anti-mosquito lotion and the incidence of dengue fever.

However, these results diverge from a study conducted by Ishak et al. (2020) at Puskesmas Pontap, Palopo, which asserted a relationship between the behavior of using anti-mosquito lotion and the incidence of dengue fever, with a p-value of 0.000 (OR = 7.222). Another study conducted by Ayun and Pawenang (2017) regarding the relationship between environmental and behavioral factors with the incidence of dengue hemorrhagic fever within the working area of Puskesmas Sekaran, Semarang, found that the habit of using anti-mosquito lotion was related to the incidence of dengue fever, with a p-value of 0.041 and OR = 4.200. This indicated that respondents who did not have the habit of using anti-mosquito lotion had a 4.2 times greater risk of experiencing dengue fever compared to those who had the habit of using anti-mosquito lotion.

The timing of using anti-mosquito lotion is related to the biting behavior of *Ae. aegypti*. *Ae. aegypti* is a diurnal mosquito, with the highest peak activity at 09:00 – 10:00 and in the afternoon at 16:00 – 17:00 (WHO, 2019; Kemenkes RI, 2021). Based on direct observations, only a few respondents used anti-mosquito lotion in the morning and evening. Several respondents used lotion when traveling or leaving the house. For respondents categorized as good in using anti-mosquito lotion but still experiencing dengue fever, this may be attributed to the lack of repeated use of anti-mosquito lotion after performing ablution, thereby still attracting female *Ae. aegypti* to bite and feed on blood.

Behavior of Using Mosquito Nets with the Incident of Dengue Hemorrhagic Fever

The variable of behavior in using mosquito nets and its relation to the incidence of dengue fever was examined through statistical tests, yielding a p-value of 0.383. This result indicates that there is no significant relationship between the behavior of using mosquito nets and the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten. This finding aligns with a study conducted by Ayun and Pawenang (2017), which concluded that there was no relationship between the habit of using mosquito nets and the incidence of dengue fever within the working area of Puskesmas Sekaran, Semarang.

Based on the observations made by researchers, several families use mosquito nets, while others have nets with holes or damage. Additionally, some families opt not to use mosquito nets due to concerns about the increased air temperature when sleeping with them installed. The use of mosquito nets in the working area of Puskesmas Panongan is perceived as impractical for preventing contact with dengue vectors.

Consequently, people prefer alternative methods such as using mosquito rackets, installing wire mesh, or applying anti-mosquito lotion.

Behavior in Hanging Clothes with the Incident of Dengue Hemorrhagic Fever

The variable of behavior in hanging clothes is the only factor significantly related to the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten, with a p-value of 0.035 and an odds ratio (OR) value of 3.632. This signifies that behavior in hanging clothes is a risk factor for the incidence of dengue fever. Respondents who demonstrated poor behavior in terms of hanging clothes have a 3.632 times higher risk of experiencing dengue fever compared to those who demonstrate good behavior in this regard.

The study results align with a study conducted by Ayun and Pawenang (2017), which also reported a significant relationship between the habit of hanging clothes in the room and the incidence of dengue fever (p-value = 0.002). According to their study, respondents with the habit of hanging clothes in the room have a 7.933 times greater risk of experiencing dengue fever than respondents who are not accustomed to hanging clothes in the room (OR = 7.933). This is supported by a study by Putri et al. (2023), which indicates that people's behavior, such as hanging clothes on the bedroom wall or behind the bedroom door, is related to the incidents of dengue fever.

One of the preferred resting places for female *Ae. aegypti* after bloodsucking is hanging clothes, characterized by low light intensity and high humidity. In this environment, female female *Ae. aegypti* await the maturation process of their eggs (Ministry of Health of the Republic of Indonesia, 2005). Light intensity and air humidity also influence the breeding of *Ae. aegypti* in terms of flight activity and egg-laying habits (Chade, 2013; Dzul-Manzanila, 2017; Putri et al., 2021).

The researchers' direct observations reveal that some residents hang their clothes behind the bedroom door, while others hang their clothes outside on the walls of their houses. However, many houses lack adequate ventilation, resulting in less sunlight entering the house.

Environmental Factor: The Availability of Wire Mesh with the Incident of Dengue Hemorrhagic Fever

The variable concerning the availability of wire mesh and its relation to the incidence of dengue fever yielded a p-value of 0.538 (p > 0.05), indicating that there is no significant relationship between the availability of wire mesh and the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten. The study results are consistent with the results reported by Husna et al. (2020), where the availability of wire mesh is not related to the incidence of dengue fever within the working area of Puskesmas Way Kandis in Bandar Lampung. Another study by Puwaningsih et al. (2017) similarly concluded that the installation of wire mesh is not related to the incidence of dengue fever within the working area of Puskesmas Banjar Negara 1, Banjar Negara.

Upon observation of the conditions in the houses of residents within the working area of Puskesmas Panongan in Tangerang, Banten, it was noted that wire mesh is not installed thoroughly throughout the house. While some houses have wire mesh installed in all door and window ventilation holes, others only have wire mesh installed in ventilation holes in the living room or or even no wire mesh at all. Furthermore, not all installed wire mesh is in good condition. To effectively prevent mosquito contact with the occupants of the house, it is crucial to install wire mesh in all door and window ventilation holes inside the house, and the condition of the wire mesh must be regularly maintained.

Environmental Factor: The Availability of Container Lids with the Incident of Dengue Hemorrhagic Fever

The study results indicate that the variable related to the availability of container lids is not related to the incidence of dengue fever (p-value = 1.000). The study results align with the study conducted by Husna et al. (2020) within the working area of Puskesmas Way Kandis in Bandar Lampung, where the availability of container lids is not related to the incidence of dengue fever. However, these results differ from the study by Apriliana et al. (2018) on the incidence of Dengue Hemorrhagic Fever in families, where, in 86 families, the variable related to the availability of container lids had a p-value of 0.040, suggesting a relation between the availability of container lids and the incidence of dengue fever.

Containers play a crucial role in controlling dengue vectors. Female *Ae. aegypti* lay mature eggs in containers filled with clean water inside houses if the containers are not closed (Putri et al., 2018). The life cycle of *Ae. aegypti*, from hatching eggs to becoming adult mosquitoes, takes around 7-10 days, and this cycle is related to the frequency of draining water from the container (CDC, 2020).

The researchers' direct observations and interviews with respondents regarding risk factors, specifically the availability of container lids, it is

evident that many residents are unaware of the types of containers that serve as breeding habitats for *Ae. aegypti*. Additionally, there is a lack of understanding about the recommended frequency of draining containers, which is ideally once a week. Potential breeding sites for larvae are also found in containers that are no longer in use, such as used buckets. Moreover, several puddles of water were observed in the water container behind the refrigerator.

High awareness among the community in dealing with dengue cases is a crucial indicator, as good knowledge not accompanied by practical behavior and actions in preventing dengue fever may be ineffective. Providing information about behaviors and environmental factors related to the incidence of dengue fever is important and must be complemented by the implementation of comprehensive preventive measures.

CONCLUSION

Based on the study results, it is evident that the distribution of dengue fever cases in the woking area of Puskesmas Panongan is 65 cases (81.25%). The behavior in hanging clothes is found to be related to the incidence of dengue fever within the working area of Puskesmas Panongan in Tangerang, Banten. However, knowledge, the behavior of using anti-mosquito lotion, the behavior of using mosquito nets, as well as environmental factors such as the availability of wire mesh and container lids in residents' houses, did not exhibit a significant relationship with the incidence of dengue fever.

SUGGESTION

Counseling and promotional efforts from government health agencies have been implemented, and there is room for improvement in delivery methods. Further clarity is needed in reviewing efforts to control and eradicate dengue fever, emphasizing the importance of increasing the community's role through empowerment activities. For the community, the PSN Movement is strengthened by engaging in community service to clean the surrounding environment, aiming to break the chain of dengue transmission.

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RELATIONSHIP BETWEEN KNOWLEDGE AND SIZE OF MUAC WITH ANEMIA IN FEMALE ADOLESCENTS

Desy Syswianti[1], Andhika[2], Dian Roslan[3], Hidayani[4]

[123]STIKes Karsa Husada Garut
[4]Universitas Indonesia Maju
Corresponding email : syswianti82desy@gmail.com

ABSTRAK : HUBUNGAN ANTARA TINGKAT PENGETAHUAN DAN UKURAN LILA TERHADAP ANEMIA PADA REMAJA PURI

Latar Belakang: Remaja putri merupakan kelompok yang memiliki risiko tinggi untuk mengalami anemia. Anemia mempengaruhi 27% remaja putri di negara-negara miskin dan 6% remaja putri di negara-negara kaya, dan di Indonesia prevalensi anemia pada remaja umur 13-18 tahun sekitar 23%. Banyak faktor yang berhubungan dengan kejadian anemia diantaranya adalah tingkat pengetahuan dan ukuran LILA.

Tujuan: Mengetahui hubungan antara tingkat pengetahuan dan ukuran LILA dengan kejadian anemia pada remaja putri di Desa Dawungsari Wilayah Kerja Puskesmas Cilawu Garut Tahun 2023.

Metode: Penelitian menggunakan desain case control, di mana kelompok kasus adalah remaja putri yang mengalami anemia dan kelompok kontrol adalah remaja putri yang tidak anemia. populasi penelitian adalah remaja putri di desa Dawungsari Wilayah Kerja Puskesmas Cilawu Garut. Sampel masing-masing sejumlah 50 responden untuk kelompok kasus dan kelompok kontrol yang dipilih dengan menggunakan purposive sampling. Pengumpulan data   menggunakan kuesioner untuk pengetahuan,   pita LILA untuk ukuran LILA, dan stik Hb untuk kejadian anemia. Analisis data digunakan Chi square.

Hasil: Ada hubungan tingkat pengetahuan dengan kejadian anemia pada remaja putri di Desa Dawungsari Wilayah Kerja Puskesmas Cilawu Garut Tahun 2023, dengan p-value sebesar 0,043 (p < 0,05). remaja putri dengan tingkat pengetahuan yang rendah mempunyai peluang untuk mengalami anemia sebesar 2,496 kali lebih tinggi dibandingkan dengan remaja putri dengan tingkat pengetahuan yang tinggi. Ada hubungan ukuran LILA dengan kejadian anemia pada remaja putri di Desa Dawungsari Wilayah Kerja Puskesmas Cilawu Garut Tahun 2023, dengan p-value sebesar 0,045 (p < 0,05).Remaja putri dengan ukurang LILA kategori kurang mempunyai peluang untuk mengalami anemia sebesar 2,447 kali lebih tinggi dibandingkan dengan remaja putri dengan ukuran LILA kategori normal..

Kesimpulan: Ada hubungan tingkat pengetahuan dan ukuran LILA terhadap kejadian anemia pada remaja putri di Desa Dawungsari Wilayah Kerja Puskesmas Cilawu Garut Tahun 2023.

Saran: Puskesmas Cilawu Garut dapat melaksanakan promosi kesehatan tentang anemia terhadap remaja putri dengan bekerja sama dengan kader kesehatan di wilayahnya.

Kata Kunci : Anemia, Pengetahuan, ukuran LILA

ABSTRACT

Background: Adolescent girls are a group at high risk of experiencing anemia. Anemia affects 27% of adolescent girls in poor countries and 6% of adolescent girls in rich countries, and in Indonesia the prevalence of anemia in adolescents aged 13-18 years is around 23%. Many factors are associated with anemia, including knowledge levels and mid-upper arm circumference (MUAC) size.

Objective: To determine the relationship between knowledge levels and MUAC size with anemia among adolescent girls in Dawungsari Village, Cilawu Sub-district, Garut District, in the year 2023.

Method: This study used a case-control design, where the case group consisted of adolescent girls with anemia and the control group consisted of adolescent girls without anemia. The study population included adolescent girls in Dawungsari Village within the working area of Cilawu Sub-district Health Center. A sample of 50 respondents was selected for each case and control group using purposive sampling. Data collection involved using a questionnaire for knowledge levels, MUAC tape for MUAC size, and Hb test strips for anemia. Data analysis was performed using the Chi-square test.

Results: There is a relationship between knowledge levels with anemia among adolescent girls in Dawungsari Village, Cilawu Sub-district, Garut District, in the year 2023, with a p-value of 0.043 (p < 0.05).

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Adolescent girls with low knowledge levels have a 2.496 times higher chance of experiencing anemia compared to those with high knowledge levels. There is a relationship between MUAC size with anemia among adolescent girls in Dawungsari Village, Cilawu Sub-district, Garut District, in the year 2023, with a p-value of 0.045 (p < 0.05). Adolescent girls with insufficient MUAC size have a 2.447 times higher chance of experiencing anemia compared to those with normal MUAC size.

Conclusions: There is a relationship between knowledge levels and MUAC size with anemia among adolescent girls in Dawungsari Village, Cilawu Sub-district, Garut District, in the year 2023.

Suggestions: Cilawu Sub-district Health Center can carry out health promotion activities about anemia targeting female adolescents in collaboration with health volunteers in the area.

Keywords: Anemia, Knowledge, MUAC size,

INTRODUCTION

Adolescence is a transitional period between childhood and adulthood (Tandoh et al., 2021). *The World Health Organization* (WHO) states that adolescents are individuals aged between 10 and 19 years. Adolescence is an important phase in which optimal growth and development occurs. During this period, adolescents have very crucial physical and psychological needs. Anemia is one of the problems that often arises in adolescence due to lack of nutritional intake (Sari et al., 2022). Anemia is a global public health problem that affects half of preschool children, adolescent girls and pregnant women. WHO states that anemia is the second leading cause of disability and estimates that the number of anemia cases worldwide is close to two billion (Ahankari et al., 2020) . Iron deficiency anemia is the most common type of anemia in adolescents (Tura et al., 2020), and is the biggest cause of morbidity and mortality in adolescents (Puspitasari et al., 2022).

Female adolescent are a group that has a greater risk of developing anemia than male adolescent. This is because the need for nutrients, including iron, increases with menstruation. Menstruation every month experienced by female adolescent allows large amounts of blood to be released (Ekasanti et al., 2020). Anemia affects 27% of female adolescent in poor countries and 6% of female adolescent in rich countries (Madestria et al., 2021) . Based on the 2017 Indonesian Demographic and Health Survey (IDHS), the prevalence of anemia among adolescents aged 13-18 years is 23% for female adolescents and 17% for male adolescents (Khobibah et al., 2021).

Based on the 2018 Basic Health Research (Riskesdas) data, the prevalence of anemia in adolescents in Indonesia reaches 32%, which means that around 3-4 out of 10 adolescents experience anemia. Factors that influence this include sub-optimal eating patterns and lack of physical activity (Widyawati, 2021) . Anemia in adolescence is a nutritional problem that has an irreversible negative impact on growth, cognitive abilities, performance, and has a serious impact throughout the reproductive years and beyond (Vaira et al., 2022).

Many factors are associated with the incidence of anemia in adolescents. The research results of Nainggolan et al. (2022) showed that anemia is still a public health problem in Indonesia among non-pregnant women of childbearing age (19–49 years). Nutritional status, medical history, and health behavior have a significant relationship with the incidence of anemia. Satriani Research (2018) get the result that family income, number of family members, menstrual cycle, and Body Mass Index (BMI), are factors associated with the incidence of anemia in adolescents. As for father's education, mother's education, menstrual volume, physical activity, dental caries, exposure to cigarette smoke, nutritional intake, stunting, and MUAC, are not related to the incidence of anemia in adolescents. The absence of a relationship between MUAC and the incidence of anemia is also supported by research by Utami et al. (2021); and Windari et al. (2018); performed on pregnant women. The opposite result was shown by the research of Ina et al. (2018); Sari et al. (2022); and Vaira et al. (2022); who got the result that there is a relationship between MUAC and the incidence of anemia. In addition, research (Ahankari et al., 2020) shows that there is a relationship between MUAC and hemoglobin levels.

MUAC is a guide that can estimate nutritional conditions in the past by describing the condition of the muscles and layers of fat under the skin (Wirawanti, 2022). Upper Arm Circumference (MUAC) is one of the risk parameters for Chronic Energy Deficiency (CED) in pregnant women, women of childbearing age and in this case including female adolescent (Mutmainnah et al., 2021). A person is said to have CED if the size of MUAC is <23.5 cm (Lipoeto et al., 2020) . Female adolescent who experience CED have the potential to

experience iron deficits, and increase the risk of anemia (Mutmainnah et al., 2021) .

research (2021) with a literature study found that knowledge about anemia has a relationship with the incidence of anemia in female adolescent . The results of this study are also supported by the results of Warlenda et al. (2019) ; Hasana et al. (2023) . Research Nurhayati et al. (2023) found that knowledge is a predisposing factor that influences adolescents' susceptibility to anemia. Knowledge about anemia will affect adolescent eating behavior (Oktariana et al., 2021) . Adolescents' knowledge of the signs and symptoms, complications, and prevention of anemia is lacking, causing adolescents to be unable to maintain consumption of foods that contain lots of iron, so that the need for iron is not fulfilled, which will ultimately increase the risk of anemia (Mulianingsih et al., 2021).

Meanwhile, Verma & Baniya (2022) in his research on factors related to the incidence of anemia in adolescents, divided knowledge into several variables according to the type of knowledge. The results of his research showed that knowledge about the causes of anemia, knowledge about anemia symptoms, knowledge about anemia treatment, knowledge about iron-rich foods, and sources of knowledge about anemia, had no relationship with the incidence of anemia. The absence of a relationship between knowledge and the incidence of anemia is also supported by research results (Isati & Hastono (2017); and Handayani & Sugiarsih (2021).

If you look at the results of the previous studies described above, it can be seen that there are inconsistencies in the results of research on the factors associated with the incidence of anemia, especially on the knowledge factor and the size of MUAC. Based on this, research on the relationship between knowledge and size of MUAC with the incidence of anemia is interesting to do.

RESEARCH METHODS

This research is a case control study, where the measurement of the independent and dependent variables is not carried out at the same time, where the researcher measures the dependent variable or effect, and then the independent variables are measured retrospectively (Alatas et al., 2018). The case group is female adolescents who suffer from anemia and the control group is female adolescents who do not suffer from anemia. The population in this study were female adolescent in Dawungsari Village, the working area of the Cilawu Garut Health Center. The samples in this study were 50 respondents each for the case group and the control group, with the sampling technique used *purposive sampling* . Data collection on knowledge about anemia was carried out using a questionnaire adopted from Utomo's research (2019). The size of MUAC data was collected using the MUAC tape, and the incidence of anemia was seen from the Hb level values measured using the Hb stick.

Univariate analysis in this study was carried out by describing the data using a frequency distribution table. Knowledge data about anemia is categorized by T-Score, which is categorized as low if T-Score <50 is categorized as high if T-Score ≥ 50. MUAC size data is categorized as low if MUAC size is <23.5 and normal if MUAC size. The data on the incidence of anemia is categorized as anemia if the Hb level is <12.0 g/dl in women and <13.0 g/dl in men and is categorized as not anemia if the Hb level is ≥12.0 g/dl in women and ≥13. 0 g/dl in males. Bivariate analysis in this study was carried out using Chi square with continuity correction, because the contingency table is 2 x 2 and N = 40 (Smoller & Smoller, 2015).

RESEARCH RESULTS
Univariate analysis
Level of Knowledge about Anemia

Table 1 shows that among female adolescent who are anemic, most of them have knowledge about anemia in the low category, namely 34 respondents (68.0%). For female adolescents who were not anemic, most of them had knowledge about anemia in the high category, namely 27 respondents (54.0%).

Table 1
Frequency Distribution of Knowledge Levels about Anemia in Young Girls in Dawungsari Village Working Area of Cilawu Garut Health Center in 2023

| Knowledge level | Incidence of Anemia in Female Adolescent | | | |
| | Yes | | No | |
	N	%	N	%
Low	34	68.0	23	46.0
Tall	16	32.0	27	54.0

MUAC size

Table 2
Frequency Distribution of MUAC Size for Female Women in Dawungsari Village Working Area of Cilawu Garut Health Center in 2023

MUAC size	Incidence of Anemia in Female Adolescent			
	Yes		No	
	N	%	N	%
Not enough	30	60.0	19	38.0
Normal	20	40.0	31	62.0

Table 2 shows that in female adolescents who are anemic, most of them have MUAC size in the less category, namely 30 respondents (60.0%). In female adolescent who are not anemic, most of them have normal MUAC sizes, namely 31 respondents (62.0%).

Bivariate Analysis
Relationship Between Level of Knowledge about Anemia with Anemia Incidence
Table 3 shows that 57 female adolescent who have knowledge about anemia are in the low category, 34 people (59.6%) have anemia, and 23 people (40.4%) are not anemic. As for 43 female adolescent who had knowledge about anemia in the high category, 16 people (37.2%) had anemia, and 27 people (62.8%) were not anemic.

Table 3
The Relationship Between Knowledge of Anemia and the Incidence of Anemia in Young Girls in Dawungsari Village, Working Area of the Cilawu Garut Health Center in 2023

Knowledge level	Incidence of Anemia in Female Adolescent				Total		p-values	OR (95% CI)
	Yes		No					
	n	%	n	%	N	%		
Low	34	59,6	23	40,4	57	100.0	0.043	2,496
Tall	16	37,2	27	62,8	43	100.0		(1.105-5.629)

Relationship Between MUAC Size and Anemia Incidence

Table 4
Relationship Between MUAC Size and Incidence of Anemia in Young Girls in Dawungsari Village Working Area of Cilawu Garut Health Center in 2023

MUAC size	Incidence of Anemia in Female Adolescent				Total		p-values	OR (95% CI)
	Yes		No					
	n	%	n	%	N	%		
Not enough	30	61,2	19	38,8	49	100.0	0.045	2,447
Normal	20	39,2	31	60,8	51	100.0		(1.095-5.468)

Table 4 shows that 49 female adolescent who have MUAC sizes are in the less category, 30 people (61.2%) have anemia, and 19 people (38.8%) are not anemic. As for 51 female adolescent who had normal MUAC size, 20 people (39.2%) had anemia, and 31 people (60.8%) were not anemic.

DISCUSSION

Based on the results of the Chi square test described in table 3, a p-value of 0.043 was obtained (p-value <0.05), so it was concluded that there was a significant relationship between the level of knowledge and the incidence of anemia in female adolescent in Dawungsari Village, Cilawu Health Center Working Area Garut in 2023. The results of this study support the results of Warlenda et al.

(2019); Kusnadi (2021); and Hasana et al. (2023). The Odds Ratio (OR) value was 2.496, which means that female adolescent with a low level of knowledge have a 2.496 times higher chance of experiencing anemia compared to female adolescent with a high level of knowledge.

Knowledge about anemia will affect adolescent eating behavior (Oktariana et al., 2021). In the PRECEDE model, predisposing factors occur at the cognitive level and one of them includes knowledge. This behavioral antecedent provides motivation to perform the behavior (Snelling, 2014). Knowledge about the causes, signs and symptoms, treatment of anemia, and foods that contain lots of iron, will motivate adolescents to consume lots of foods that contain iron. Adequate iron intake will increase the level of Hb in adolescents so that it will reduce the incidence of anemia.

If you look at the results of the research described in table 1, most of the female adolescent who are anemic have knowledge about anemia in the low category, namely 34 respondents (68.0%). For female adolescents who were not anemic, most of them had knowledge about anemia in the high category, namely 27 respondents (54.0%). There are still many female adolescent who have knowledge about anemia in the low category, it should be taken into consideration for the Cilawu Garut Health Center to carry out health promotion about anemia to adolescents. The program to prevent anemia in adolescents is to carry out a school-based supplementation program for blood-added tablets in junior high schools in the Cilawu Health Center area.

Based on the results of the Chi square test described in table 4, a p-value of 0.045 was obtained (p-value <0.05), so it was concluded that there was a significant relationship between MUAC size and the incidence of anemia in female adolescent in Dawungsari Village, Cilawu Health Center Working Area Garut in 2023. The results of this study support the results of the study Ina et al. (2018); Sari et al. (2022); and Vaira et al. (2022). The Odds Ratio (OR) value was 2.447, which means that female adolescent with the MUAC size category have less chance of experiencing anemia by 2.447 times higher than girls with the normal category of MUAC size.

Previous studies have shown that the MUAC size is related to BMI. This means that MUAC size can be a parameter of malnutrition (Laghari et al., 2017). The low MUAC size is a risk parameter for CED (Mutmainnah et al., 2021). A young girl with a low MUAC size indicates that the nutritional content including iron in the body is not sufficient or not sufficient for the body's needs. Adolescent girls need a lot of iron, especially during menstruation. If the need for iron is insufficient, female adolescent will be at risk of developing anemia.

CONCLUSION

There is a relationship between the level of knowledge and the size of MUAC with the incidence of anemia in female adolescent in Dawungsari Village, the Working Area of the Cilawu Garut Health Center in 2023.

SUGGESTION

It is hoped that the Cilawu Garut Health Center can carry out health promotion on anemia for adolescents by working with health cadres in their area.

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Enti Lestari, Dina Dwi Nuryani, Fitri Eka Sari, Aprina

RISK FACTORS FOR CHILD MARRIAGE

Enti Lestari[1], Dina Dwi Nuryani[2], Fitri Eka Sari[3], Aprina[4]

[1]Master of Public Health Study Program at the Faculty of Public Health Malahayati University
Email : entilestari9@gmail.com

ABSTRAK : FAKTOR RISIKO PERNIKAHAN USIA ANAK

Latar Belakang: Pernikahan merupakan peristiwa penting dalam kehidupan, namun jika dilakukan usia anak maka dapat menyebabkan dampak negatif seperti kekerasan rumah tangga sebesar 56%. Data Periode Januari – Agustus 2022 terdapat 23 kasus pernikahan dini dari 100 jumlah sasaran remaja di Pekon Sedampah. Adapun faktor-faktor yang berhubungan dengan pernikahan dini ialah faktor presdiposisi (pengetahuan, sikap, budaya), faktor pemungkin (pendidikan, keterpaparan pornografi), faktor penguat (pengetahuan, sikap responden dan pendapatan orang tua). Tujuan penelitian ini diketahui Faktor Risiko Pernikahan Usia Anak di Pekon Sedampah Kabupaten Lampung Barat Tahun 2022.

Metode: Jenis penelitian ini adalah kuantitatif dengan rancangan penelitian secara cross sectional. Populasi dalam penelitian ini adalah seluruh remaja di Pekon Sedampah yang berjumlah 100 responden dengan sampel yang diguanakan sebanyak 67 responden menggunakan teknik purposive sampling. Penelitian telah dilakukan di Pekon Sedampah Kabupaten Lampung Barat pada bulan Januari 2023. Analisis data dengan univariat, bivariat, multivariat (regresi logistik faktor resiko desain).

Hasil : ada hubungan pengetahuan (p-value = 0,029), pendidikan (p-value = 0,003), pendapatan orang tua (p-value = 0,001), pendidikan orang tua (p-value = 0,001), teman sebaya (p-value = 0,038), kepercayaan (p-value= 0,001), budaya (p-value = 0,001), pengaruh dukunagan keluarga (p-value = 0,027), sikap (p-value = 0,037) dan faktor dominan yang menjadi penyebab pernikahan dini adalah pendapatan orang tua dengan nilai OR = 17,0. Saran dapat meningkatkan pengetahuan remaja dan keluarga tentang kesehatan reproduksi remaja baik berupa penyuluhan, KIE melalui media informasi, dan PIK-KRR di sekolah

Kata kunci: pendidikan, pengetahuan, pernikahan usia anak.

ABSTRACT

Background: Marriage is momentous event in life, but if done at a young age, it can result in negative impacts such as a 56% prevalence of domestic violence. Data for the period January - August 2022 shows that there were 23 cases of early marriage out of 100 targeted teenagers in Pekon Sedampah. The factors associated with early marriage are predisposition factors (knowledge, attitudes, and culture), enabling factors (education, exposure to pornography), reinforcing factors (knowledge, attitudes of respondents and parental income). The purpose of this study was to determine the risk factors for child marriage in Pekon Sedampah, West Lampung Regency in 2022.

Methods: This study is quantitative with a cross-sectional research design. The population in this study consists of all adolescents in Pekon Sedampah, totaling 100 respondents, with a sample size of 67 respondents using purposive sampling. The research was conducted in Pekon Sedampah, West Lampung Regency in January 2023. Data analysis includes univariate, bivariate, and multivariate (logistic regression for risk factor design).

Results: There is a relationship between knowledge (p-value = 0.029), education (p-value = 0.003), parental income (p-value = 0.001), parental education (p-value = 0.001), peers (p-value = 0.038), trust (p-value = 0,001), culture (p-value = 0.001), the influence of family support (p-value = 0.027), attitude (p-value = 0.037) and the dominant factor that causes early marriage is parental income with an OR value = 17.0. Recommendations include improving the knowledge of adolescents and families about adolescent reproductive health through education, information, and communication activities (KIE) through media, and school-based reproductive health programs (PIK-KKR).

Keywords: education, knowledge, child marriage.

INTRODUCTION

A global consensus on the need to eliminate early, forced and child marriage has emerged in recent years. Efforts to eliminate child marriage are a response to the growing body of evidence demonstrating the scale and scope of the problem (Kemenkes, 2016).

According to data released by UNICEF, about 21% of women and 4% of men in the world are married before 18 years of age. From this data, there are about 650 million women who marry while still in the category of children with 12 million under 18 who marry per year. The five countries with the highest rates of early marriage under 18 are Nigeria, Chad, Bangladesh, Mali and Guinea. Nigeria alone is even more than ¾ of the total number of adolescents, namely 76.6% who are married under 18 years of age. Meanwhile, the other 4 countries are still relatively high because they are in the range of more than 65% (ICRW) (Unicef, 2020).

In 2018, 1 in 9 girls were married in Indonesia. The number of women aged 20-24 who married before the age of 18 in 2018 was estimated to be around 1,220,900, placing Indonesia in the top 10 countries with the highest absolute rate of child marriage in the world. There were 11 provinces that experienced an increase in the prevalence of women 20-24 years old whose first marriage was less than 18 years old. The highest increase in prevalence is in North Maluku, which is 3.35 percentage points (10.01 to 13.36 percent). On the other hand, the prevalence of women 20-24 years old whose first marriage was less than 18 years old in South Kalimantan experienced the largest decrease of 5.56 percentage points (23.19 in 2015 to 17.63 per cent in 2018) (Unicef, 2020).

Data for 2020 - 2021 from the Balik Bukit Religious Affairs Office (KUA), Liwa District, in 2020 there were 257 marriages, 76 (29.5%) of which were child marriages, while in 2021 from 238 marriages there were 52 (21.8%) child marriages. Of the 12 Pekon under the auspices of the Balik Bukit KUA, Pekon Sedampah is the Pekon that contributes the highest number of child-age marriages among other Pekon. From January to August 2022, there were 23 cases of child marriage out of 100 targeted teenagers in Pekon Sedampah . The majority of the population of Pekon Sedampah earns a living as a farmer and has a primary and junior high school education.

Girls who marry young face adverse health consequences as a result of early childbirth, increased risk of domestic violence, poor nutrition, and impaired sexual and reproductive health. They experience poorer outcomes for all social indicators and family income compared to girls who delay marriage. These adverse impacts will also be experienced by their children and may continue into future generations (Susetiawan in Eppang, 2016).

According to UNICEF 2015, marriage before the age of 18 occurs in many parts of the world, with parents encouraging the marriage of their children when they are under 18 in the hope that marriage will benefit them financially and socially, as well as relieve the financial burden on the family. In reality, child marriage is a violation of human rights, affects girls' development and often results in risky pregnancies and social isolation, low education levels and the onset of poverty (UNICEF, 2015).

Arikhman (2019) Factors Affecting Early Marriage in Baru Village, Kerinci Regency The results of the study showed that less than half (47.8%) of respondents married early, more than half (61.2%) had a low level of knowledge about early marriage, more than half (53.7%) had a supportive culture about early marriage, more than half (62.7%) had the role of peers playing a role. There is a relationship between the level of knowledge, culture, and the role of peers with early marriage in Baru Village, West Warm Water Subdistrict, Kerinci Regency in 2019.

The phenomenon of marriage at a young age is still very high. This can be seen from the rise of young marriages among teenagers, which now not only occurs in traditional circles but has penetrated school students who should focus on studying and developing talents. Marriage at a young age is just a slice of the social reality facing society today. Among teenagers, marriage at a young age is considered a way out to avoid free sex. Based on the above background, the researcher is interested in conducting research with the title risk factors for child marriage in Pekon Sedampah, West Lampung Regency in 2022.

RESEARCH METHODS

This research is a quantitative study, with a design using the *cross-sectional* method. This research was conducted in Pekon Sedampah, West Lampung Regency in 2022, in January 2023. The population in this research is all adolescents in Pekon Sedampah, totalling 100 respondents (August 2022 data), with a sample of 67 respondents. The *dependent* variable in this study is child marriage and the *independent* variables are knowledge, education, family factors and peer influence. Data collection using a questionnaire. The analysis used was univariate analysis and bivariate analysis (*Chi-Square) and multivariate analysis.*

RESEARCH RESULTS
Univariate Analysis

Table 1
Frequency distribution of child marriage, knowledge, education, peer influence, family factors (family income and parental education), culture, family support, beliefs, attitudes in Pekon Sedampah, West Lampung Regency in 2022.

Variables	Category	N	%
Child marriage	Married as a child	28	41.8
	Unmarried child age	39	58.2
Knowledge	Insufficient	29	43.3
	Good	38	56.7
Education	Low	30	44.8
	High	37	55.2
Peer Influence	Negative	25	37.3
	Positive	42	62.7
Family Income	Low	31	46.3
	High	36	53.7
Parental education	Low	40	59.7
	High	27	40.2
Culture	Negative	29	43.3
	Positive	38	56.7
Family support	Negative	36	53.7
	Positive	31	46.3
Trust	Negative	25	37.3
	positive	42	62.7
Attitude	Negative	47	70.1
	Positive	20	29.9

Based on table 1 above, it is known that out of 67 respondents, 39 (58.2%) were not married at child age, 38 (56.7%) respondents with good knowledge, 37 (55.2%) respondents with high education, 42 (62.7%) respondents with positive peer influence, 36 (53.7%) respondents with high family income, 40 (59.7%) respondents with low parental education, 38 (56.7%) respondents with positive cultural influence, 36 (53.7%) respondents with negative family support, 42 (62.7%) respondents with high family income, 40 (59.7%) respondents with low parental education, 38 (56.7%) respondents with positive cultural influence, 36 (53.7%) respondents with negative family support, 42 (62.7%) respondents with positive trust, and 47 (70.1%) respondents with negative attitude.

Bivariate Analysis

Table 2
The relationship between knowledge and child marriage in Pekon Sedampah, West Lampung Regency, 2022

Variables	Category	Child marriage				Total		P value	OR 95% CI
		Married		Unmarried					
		n	%	n	%	N	%		
Knowledge	insuficient	17	58.6	12	41.4	29	100,0	0.029	3.477 (1.256-9.630)
	Good	11	28.9	27	71.1	38	100,0		
Education	Low	19	63.3	11	36.7	30	100,0	0.003	5.374 (1.869-15.451)
	High	9	24.3	28	75.7	37	100,0		
Parents' income	Low	20	64.5	11	35.5	31	100,0	0.001	6.364 (2.169 -18.672)
	High	8	22.2	28	77.8	36	100,0		
Parental education	Low	25	62.5	15	22.7	40	100,0	0.001	12.778 (3.270-49.925)
	High	3	11.5	23	88.5	26	100,0		
Peer influence	Negative	15	60.0	10	40.0	25	100,0	0.038	3.346

		n	%	n	%	Total	%	p-value	OR (CI)
	Positive	13	31.0	29	69.0	42	100,0		(1.190-9.406)
Trust	Negative	18	72.0	7	10.4	25	100,0	0.001	8.229
	Positive	10	23.8	32	76.2	42	100,0		(2.671-25.354)
Culture	Negative	20	69.0	9	31.0	29	100,0	0.001	8.333
	Positive	8	21.1	30	78.9	38	100,0		(2.752-25.230)
Family Support	Negative	20	55.6	16	44.4	36	100,0	0.027	3.594
	Positive	8	25.8	23	74.2	31	100,0		(1.272-10.157)
Attitude	Negative	24	51.1	23	48.9	47	100,0	0.037	4.174
	Positive	4	20.0	16	80.0	20	100,0		(1.213-14.365)

Based on table 2, it is known that out of 29 respondents with poor knowledge, 17 (58.6%) respondents chose to marry at child age and 12 (41.4%) respondents chose not to marry at child age. Of the 38 respondents with good knowledge, 11 (28.9%) respondents chose to marry at child age and 27 (71.1%) respondents chose not to marry at child age. The results of the statistical test obtained *p-value* = 0.029 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between knowledge and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 3.4 meaning that respondents with poor knowledge have a 3.4 times chance of choosing child marriage when compared to respondents with good knowledge.

Based on table 2, it is known that out of 30 respondents with low education, 19 (63.3%) respondents chose to marry at child age and 11 (36.7%) respondents chose not to marry at child age. Of the 37 respondents with higher education, 9 (24.3%) respondents chose to marry at child age and 28 (75.7%) respondents chose not to marry at child age. The statistical test results obtained *p-value* = 0.003 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between education and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 5.3 meaning that respondents with low education have a 5.3 times chance of choosing marriage when compared to higher education respondents.

Based on table 2, it is known that out of 31 respondents with low parental income, 20 (64.5%) respondents chose to marry at child age and 11 (35.5%) respondents chose not to marry at child age. Of the 36 respondents with high parental income, 8 (22.2%) respondents chose to marry at child age and 28 (77.8%) respondents chose not to marry at child age. The results of the statistical test obtained *p-value* = 0.001 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between parental income and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 6.3 meaning that respondents with low parental income have a 6.3 times chance of choosing child marriage when compared to respondents with high parental income.

Based on table 2, it is known that out of 40 respondents with low parental education, 25 (62.5%) respondents chose to marry at child age and as many as 15 (22.7%) respondents chose not to marry at child age. Of the 26 respondents with high parental education, 3 (11.5%) respondents chose to marry at child age and 23 (88.5%) respondents chose not to marry at child age. The statistical test results obtained *p-value* = 0.035 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between parental education and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 12.7 meaning that respondents with low parental education have a 12.7 times chance of choosing child marriage when compared to respondents with high parental education.

Based on table 2, it is known that out of 30 respondents with negative peer influence, 15 (60.0%) respondents chose to marry at child age and as many as 10 (40.0%) respondents chose not to marry at child age. Of the 42 respondents with positive peer influence, 13 (31.0%) respondents chose to marry at child age and 29 (69.0%) respondents chose not to marry at child age. The results of the statistical test obtained *p-value* = 0.038 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between peer influence and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 3.3 meaning that respondents with negative peer influence have a 3.3 times chance of choosing child marriage when compared to respondents with positive peer influence.

Based on table 2, it is known that out of 30 respondents with negative beliefs, 18 (72.0%) respondents chose to marry at child age and 7 (10.4%) respondents chose not to marry at child age.

Of the 42 respondents with positive beliefs, 10 (23.8%) respondents chose to marry at child age and 32 (76.2%) respondents chose not to marry at child age. The statistical test results obtained *p-value* = 0.001 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between trust and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 8.2, meaning that respondents with negative trust have an 8.2 times chance of choosing child marriage when compared to respondents with positive trust.

Based on table 2, it is known that out of 29 respondents with negative culture, 20 (69.0%) respondents chose to marry at child age and 9 (31.0%) respondents chose not to marry at child age. Of the 38 respondents with a positive culture, 8 (21.1%) respondents chose to marry at child age and 30 (78.9%) respondents chose not to marry at child age. The results of the statistical test obtained *p-value* = 0.001 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a cultural relationship with child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 8.3 meaning that respondents with a negative culture have a chance of 8.3 times choosing to marry at a child's age when compared to positive culture respondents.

Based on table 2, it is known that out of 36 respondents with negative family support, 20 (55.6%) respondents decide to marry at child age and 16 (44.4%) respondents chose not to marry at child age. Of the 31 respondents with positive family support, 8 (25.8%) respondents chose to marry at child age and 23 (74.2%) respondents chose not to marry at child age. The statistical test results obtained *p-value* = 0 027 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between the influence of family support and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 3.5, meaning that respondents with negative family support have a 3.5 times chance of choosing child marriage when compared to respondents with positive family support.

Based on table 2, it is known that out of 47 respondents with negative attitudes, 24 (51.1%) respondents decide to marry at child age and 23 (48.9%) respondents chose not to marry at child age. Of the 20 respondents with a positive attitude, 4 (20.0%) respondents chose to marry at child age and 16 (80.0%) respondents chose not to marry at child age. The results of the statistical test obtained *p-value* = 0.037 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between attitude and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 4.1, meaning that respondents with negative attitudes have a 4.1 times chance of choosing marriage when compared to respondents with positive attitudes.

Multivariate Analysis
Table 3
Bivariate Analysis Results for Multivariate Model Candidate Selection

Variables	*p-Value*
Culture	0.000
Attitude	0.026
Knowledge	0.018
Family income	0.000
Education	0.002
Family role/support	0.010
Parental education	0.000
Peers	0.013
Trust	0.000

Based on table 3 above, it is known that there are 9 variables that become candidates in modelling because the *p-value* ≤ 0.25. They are: knowledge, education, peers, family income, parents' education, culture, family support, trust, and attitude.

The fourth model to the eighth model, there was a change in OR value > 10% in the existing variables, so the last model was obtained.

Table 4
Multivariate model of stage I multiple logistic regression

Variables	p value	OR	95% CI for Exp(B)	
			Lower	Upper
First Model				
culture	0.220	11.454	0.232	564.688
attitude	0.667	1.670	0.161	17.287
knowledge	0.073	4.853	0.864	27.256
family income	0.016	25.633	1.830	359.016
Education	0.233	7.840	0.266	231.233
family role/support	0.906	1.136	0.139	9.280
parental education	0.240	6.873	0.276	171.415
peers	0.958	1.054	0.152	7.287
trust	0.516	3.187	0.097	104.961
culture	0.220	11.454	0.232	564.688
Second Model				
culture	0.207	11.701	0.256	534.040
attitude	0.664	1.677	0.163	17.288
knowledge	0.069	4.808	0.887	26.067
family income	0.015	25.861	1.888	354.303
Education	0.232	7.760	0.270	223.321
family role/support	0.882	1.159	0.164	8.211
parental education	0.213	7.053	0.325	152.985
trust	0.517	3.158	0.097	102.269
Third Model				
culture	0.202	10.879	0.277	426.691
attitude	0.667	1.668	0.163	17.093
knowledge	0.067	4.851	0.896	26.266
family income	0.007	28.026	2.535	309.901
Education	0.227	7.932	0.276	227.727
parental education	0.212	7.083	0.327	153.388
trust	0.461	3.432	0.130	90.918
Fourth Model				
culture	0.219	7.924	0.293	214.408
knowledge	0.067	4.758	0.895	25.283
family income	0.004	32.016	3.068	334.084
Education	0.173	9.606	0.370	249.701
parental education	0.224	6.581	0.315	137.448
trust	0.312	4.638	0.237	90.654
Fifth Model				
culture	0.004	33.554	3.082	365.304
attitude	0.431	2.336	0.283	19.281
knowledge	0.064	4.809	0.911	25.395
family income	0.007	25.831	2.427	274.928
Education	0.203	8.557	0.314	233.272
parental education	0.242	5.543	0.316	97.383
Sixth Model				
culture	0.262	6.556	0.245	175.178
attitude	0.442	2.412	0.256	22.733
knowledge	0.053	5.198	0.976	27.676
family income	0.005	17.246	2.417	123.044
parental education	0.006	31.499	2.708	366.400
trust	0.390	4.140	0.162	105.795
Seventh Model				

culture	0.118	19.216	0.471	783.356
attitude	0.750	1.438	0.154	13.416
knowledge	0.055	4.884	0.965	24.730
family income	0.004	35.752	3.092	413.337
Education	0.009	31.674	2.371	423.069
trust	0.635	2.225	0.082	60.508
Eighth Model				
attitude	0.932	0.913	0.112	7.418
knowledge	0.080	4.326	0.840	22.281
family income	0.003	24.316	2.899	203.934
Education	0.325	4.671	0.217	100.408
Parental education	0.127	11.111	0.504	244.822
trust	0.002	20.681	2.976	143.715
Ninth Model				
culture	0.238	9.140	0.231	361.867
attitude	0.679	1.582	0.180	13.914
family income	0.010	22.262	2.108	235.120
Education	0.174	9.156	0.376	222.742
parental education	0.176	6.826	0.423	110.038
trust	0.466	3.444	0.124	95.758
Last Model				
culture	0.202	10.879	0.277	426.691
attitude	0.667	1.668	0.163	17.093
knowledge	0.067	4.851	0.896	26.266
family income	0.007	28.026	2.535	309.901
Education	0.227	7.932	0.276	227.727
parental education	0.212	7.083	0.327	153.388
trust	0.461	3.432	0.130	90.918

Table 5
Interaction Test Model

Variables	p value	OR	95% CI for Exp(B)	
			Lower	Upper
First Model				
culture	.999	122.000	.000	.
attitude	.332	6.613	.146	300.317
knowledge	.041	16.339	1.124	237.456
revenue	.999	160.746	.000	.
Education	.999	188.225	.000	.
parental education	.483	3.623	.099	131.972
trust	.999	.000	.000	.
culture by income	.999	.000	.000	.
income by attitude	.311	.068	.000	12.301
income by knowledge	.460	.224	.004	11.855
income by education	1.000	1.412	.000	.
income by parental education	1.000	1.521	.000	.
income by trust	.999	100.000	.000	.

Based on the interaction table, it is known that there is no interaction between income and other variables. After analysis, it was found that The independent variables included in the regression model are culture, attitude, knowledge, family income, education, parental education and trust. In the *coefficient* box we can get the equation of the line in column B is:

Logit (y) = α+β1+ β2+ β3+ β4+ β5......etc
=-5,365 +2.387+0.511+1.579+3.333+2.071 +1.958 +1.233
= -5,365+13.072

= 7.707

$$P= \frac{1}{1+e^{-(\alpha+\beta1+\beta2+.....)}}$$

$$P= \frac{1}{1+ 2.718^{-(7.707)}}$$

P = 1 / 1.0004 = 0.9996

  = 99.96%

The results of the logistic regression equation that culture, attitude, knowledge, family income, education, parental education and trust have a probability of child marriage of 99.96%.

DISCUSSION
Univariate Analysis
Based on the results of the study, it is known that out of 67 respondents, 39 (58.2%) did not marry at child age, 38 (56.7%) respondents with good knowledge, 37 (55.2%) respondents with high education, 42 (62.7%) respondents with positive peer influence, 36 (53.7%) respondents with high family income, 40 (59.7%) respondents with low parental education, 38 (56.7%) respondents with positive cultural influence, 36 (53.7%) respondents with negative family support, 42 (62.7%) respondents with positive trust, and 47 (70.1%) respondents with negative attitude.

Bivariate Analysis
The relationship between knowledge and child marriage in Pekon Sedampah, West Lampung Regency, 2022
Based on the results of statistical tests obtained *p-value* = 0.029 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between knowledge and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 3.4 meaning that respondents with poor knowledge have a 3.4 times chance of choosing child marriage when compared to respondents with good knowledge.

In line with Dini's research (2020) the results of bivariate analysis illustrate a significant relationship (p value < α) between adolescent girls' knowledge of Maturation of Marriage Age and the risk of Early Marriage at SMPN 9 Cirebon City. Pandaleke's research (2017) the results showed that the significance value of knowledge (p=0.007 <0.05) was related to early marriage in East Ratahan District, Southeast Minahasa Regency.

In the opinion of the researcher, respondents with good knowledge have extensive knowledge about the impact of early marriage, this can be due to easy access to information from print media, television and other social media. Whereas respondents with poor knowledge are due to a lack of information about early marriage and a lack of sexual health education obtained from family, friends and schools.

The relationship between education and child marriage in Pekon Sedampah, West Lampung Regency, 2022
Based on the results of statistical tests obtained *p-value* = 0.003 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between education and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 5.3 meaning that respondents with low education have a 5.3 times chance of choosing marriage when compared to higher education respondents.

Adolescents, especially women, have fewer opportunities for formal education and employment, which in turn affects the decision-making ability of their empowerment to delay marriage. Education is a learning process which means that in education there is a process of growth, development or change towards a more mature, better and mature individual, group or society. Education is currently the primary need of every human being. (Khodijah, 2014).

In line with Pandaleke's research (2017) the results showed that the significance value of education (p=0.007 <0.05) with early marriage in East Ratahan District, Southeast Minahasa Regency. Wulanuari's research (2017) statistical test results using the chi-square test obtained a p-value of 0.035 (p <0.05). So it can be concluded that the respondent's education variable has a relationship with early marriage in women.

In the researcher's opinion, low levels of education and knowledge affect limited mindsets that will have an impact on individual behavior. Education can influence the determination of a person's attitude in making decisions, including the decision to get married. When someone has a higher education, it is expected that they will get more and more information, from this information it can increase one's knowledge so that with knowledge one can determine a wise attitude in making the decision to get married.

The relationship between parental income and child marriage in Pekon Sedampah, West Lampung Regency, 2022
Based on the results of statistical tests obtained *p-value* = 0.001 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between

parental income and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 6.3 meaning that respondents with low parental income have a 6.3 times chance of choosing child marriage when compared to respondents with high parental income.

In the researcher's opinion, parents with low family income tend to tell their children to get married to reduce the burden on the household and to become independent. The number of family members is related to the family income situation of the family. The greater the number of family members, the greater the likelihood of parents marrying off their children at an early age with the assumption that it will ease the burden on the family's family income. Parents with low family income tend to tell their children to get married to reduce the burden on the household and to become independent. The number of family members is related to the family income situation of the family.

The relationship between parental education and child marriage in Pekon Sedampah, West Lampung Regency, 2022

Based on the results of statistical tests obtained *p-value* = 0.035 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between parental education and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 12.7 meaning that respondents with low parental education have a 12.7 times chance of choosing child marriage when compared to respondents with high parental education.

In line with Syakiri's research (2017) there is a relationship between respondents' mother's education and early marriage (p-value=0.005; OR= 12.719; 95% CI= 1.598-101.226).

According to the researchers, low parental education can cause teenagers to drop out of school. Parents say that it is better to work which can make money than school which is not necessarily successful and school can spend money. In the opinion of researchers, the education factor also influences. The lack of knowledge gained will cause their mindset to become narrow, unwilling to think about the future that they know is only now.

The relationship between peer influence and child marriage in Pekon Sedampah, West Lampung Regency, 2022

Based on the results of statistical tests obtained *p-value* = 0.038 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between peer

influence and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 3.3 meaning that respondents with negative peer influence have a 3.3 times chance of choosing child marriage when compared to respondents with positive peer influence.

According to the researcher's assumption, there is a relationship between peer influence and early marriage because negative peer influence greatly impacts adolescents who enter into early marriage due to ridicule and invitations to get married quickly so that there are friends who are married to share experiences. Negative influence in sharing information about sex also greatly impacts adolescents who marry at an early age due to premarital pregnancy. Teenagers who continue their education outside the city and gather with fellow educated teenagers have a positive influence by succeeding themselves to get a decent job and arrange a brighter future. In the opinion of researchers, adolescent development states that in the process of maturation, the influence of the family has shifted to peers, the environment and relationships.

In the opinion of researchers, this promiscuity is caused by a lack of social control from the community, especially religious leaders and community leaders, where the community is less concerned with the relationships that exist in the surrounding environment. They consider that whatever young people who are dating do is normal even though sometimes their relationships have crossed the line. Even some parents do not feel embarrassed if their children get married because they are pregnant outside of marriage. Therefore, the role of parents is needed to monitor the association and environment where young women are and the role of religious leaders is needed to instil moral and religious values in the community in order to avoid promiscuity that can harm themselves.

The relationship between beliefs and child marriage in Pekon Sedampah, West Lampung Regency, 2022

Based on the results of statistical tests obtained *p-value* = 0.001 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between trust and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 8.2 meaning that respondents with negative trust have an 8.2 times chance of choosing child marriage when compared to respondents with positive trust.

Family beliefs and customs also determine the occurrence of marriage at a young age. It is often found that parents marry off their children at a very

young age because of the desire to improve the family's social status, accelerate inter-family relations and/or to maintain the family lineage.

The relationship between culture and child marriage in Pekon Sedampah, West Lampung Regency, 2022

Based on the results of statistical tests obtained *p-value* = 0.001 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a cultural relationship with child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 8.3 meaning that respondents with a negative culture have a chance of 8.3 times choosing to marry at a child's age when compared to positive culture respondents.

According to the researcher's assumption, there is a relationship between peer influence and early marriage because negative peer influence greatly impacts adolescents who enter into early marriage due to ridicule and invitations to get married quickly so that there are friends who are married to share experiences. Negative influence in sharing information about sex also greatly impacts adolescents who marry at an early age due to premarital pregnancy. Teenagers who continue their education outside the city and gather with fellow educated teenagers have a positive influence by succeeding themselves to get a decent job and arrange a brighter future.

In the opinion of researchers, most villagers say that they marry their children so young just because they follow customs. They think that if they refuse someone's proposal from the man's side, then their child will get a karma, namely becoming an old virgin or will not sell again, because there is an assumption that if they refuse someone's proposal then later they can "kuwalat" become an old virgin.

According to the researcher's opinion, the culture believed in the community includes girls who marry over the age of 20 will become old maids, and if they marry late, they will become a disgrace to the family. So it is not surprising that if there is a woman who is married for a long time (age> 20 years) it will be a topic of conversation in the community. For fear of being ridiculed by the community, there are many marriages under the age of 20. Plus, when they see that many of their friends are already married, they want to get married too.

These cultures are believed by adolescent girls due to their lack of knowledge about reproductive health. Therefore, the role of health workers is needed to be able to provide counselling to the community about the impact of early marriage so that they realise that marrying above the age of 20 is not a disgrace but an ideal age to start reproducing and no more early marriages occur as a result of the low knowledge of adolescent girls about early marriage.

The relationship between the influence of family support and child marriage in Pekon Sedampah, West Lampung Regency in 2022

Based on the results of statistical tests obtained *p-value* = 0 027 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between the influence of family support and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 3.5 meaning that respondents with negative family support have a 3.5 times chance of choosing child marriage when compared to respondents with positive family support.

In the opinion of the researcher, the magnitude of the role of parents is viewed in terms of a family communication perspective, where these roles are one of the determinants of a teenager's decision to marry at a young age. Families that do not have a harmonious relationship will have an impact on children's free sexual behavior and can lead to early marriage. Parents who have a low understanding of family life view that family life will create a good relationship so that faster marriage is the main solution for parents.

The relationship between attitudes and child marriage in Pekon Sedampah, West Lampung Regency, 2022

Based on the results of statistical tests obtained *p-value* = 0.037 which means p <α = 0.05 (Ha is accepted and Ho is rejected), it can be concluded that there is a relationship between attitude and child marriage in Pekon Sedampah, West Lampung Regency in 2022, with an OR value of 4.1 meaning that respondents with negative attitudes have a 4.1 times chance of choosing marriage when compared to respondents with positive attitudes.

Multivariate Analysis

The most dominant factor was family income with the highest OR value of 22.262 and p-value = 0.007 (95% CI = 2.108 - 235.120).

Socio-economically, teenage marriage is one of the symptoms that indicate the low status of women. In some cases, teenage marriages are associated with the discontinuation of women's schooling, which results in low levels of education. Low education is detrimental to women's economic position and low levels of female labor participation (Aprina, 2020).

CONCLUSION

There were 39 (58.2%) respondents with married child age, there were 38 (56.7%) respondents with good knowledge, there were 37 (55.2%) respondents with high education, there were 42 (62.7%) respondents with positive peer influence, there were 36 (53.7%) respondents with sufficient family income, there were 40 (59.7%) respondents with basic parental education, there were 38 (56.7%) respondents with positive cultural influence, there were 36 (53.7%) respondents with negative family support, there were 42 (62.7%) respondents with good trust, and there were 47 (70.1%) respondents with negative attitude. There is a relationship between knowledge with child marriage education with child marriage family factors (parents' income and parents' education) with child marriage peers with child marriage trust with child marriage culture with child marriage age influence of family support with child marriage attitude with child marriage age in Pekon Sedampah Regency is family income with the largest OR value of 22.262 and p-value = 0.007 (95% CI = 2,108 - 235,120).

SUGESSTIONS

Health Office For health workers should continue to take promotive actions such as counselling and providing knowledge for parents about early marriage to prevent early marriage. Community Improve informal education, such as attending counselling - counselling held by health workers. Adolescents For adolescent girls, they can fill their spare time by doing positive activities such as taking courses or tutoring so that later adolescent girls have skills that can be used as jobs, so that adolescent girls are not bored at home and can help the family's income and ultimately can make adolescent girls delay their marriage age.

Researchers Furthermore, scientific development study materials to add information about knowledge about early marriage. This research can be used as a basis for further research using different types of research such as qualitative research.

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Yeri Delsia Nenogasu, Merlin M.M. Juwa

STUDY OF THE HISTORY OF MATERNAL NUTRITIONAL STATUS AND NEWBORN HEALTH ON TODDLER NUTRITION PROBLEMS

Yeri Delsia Nenogasu[1], Merlin M.M. Juwa[2]

[1,2]Lecturer of Midwifery S1 Study Program, Citra Bangsa University, Kupang - NTT – Indonesia
Email correspondence: yerinenogasu0801@gmail.com

ABSTRAK : KAJIAN RIWAYAT STATUS GIZI IBU DAN KESEHATAN BAYI BARU TERHADAP MASALAH GIZI BALITA

Latar Belakang: Masalah Gizi balita menghambat perkembangan kognitif dan mengakibatkan penyakit kronis yang dapat berdampak pada kualitas hidup dikemudian hari. Faktor intrauterine seperti gizi ibu selama hamil, yang berdampak pada berat badan janin. Faktor ektrauterin seperti ASI ekslusif, pola asuh dan sanitasi lingkungan. Prevalensi masalah gizi seperti *stunting* di Provinsi NTT adalah yang tertinggi di Indonesia.

Tujuan: Penelitian ini bertujuan untuk mengatahui dampak langsung dan tidak langsung status gizi ibu dan kesehatan bayi baru lahir terhadap masalah gizi balita.

Metode Penelitian: Penelitian ini adalah penelitian analitik korelasional dengan pendekatan metode *cross sectional.* Kebenaran konsep teori yang dirumuskan diuji menggunakan *Structural Equation Modeling* (SEM) dengan pendekatan *Partial Least Square* (PLS) dengan aplikasi smart PLS 3.0.

Hasil: Status gizi ibu signifikan memengaruhi kesehatan bayi baru lahir (*T-statistic* diatas *rule of thumb* yaitu 2,545). Kesehatan bayi baru lahir berdampak namun tidak signifikan memengaruhi masalah gizi balita (*wasting*) dengan nilai *T-statistic* diatas *rule of thumb* yaitu 1,081. Status gizi ibu berdampak namun tidak signifikan memengaruhi masalah gizi gizi balita (*wasting*) dengan nilai *T-statistic* diatas *rule of thumb* yaitu 0,131.

Kesimpulan: Interaksi antara status gizi ibu (IMT dan Lila) berdampak positif 11,9% terhadap kesehatan bayi baru lahir dan secara bersamaan (status gizi ibu dan kesehatan baru lahir) berdampak positif 3% terhadap masalah gizi balita (*wasting*). Meningkatnya status gizi ibu (IMT dan Lila) sebelum hamil adalah akan meningkatkan kesehatan bayi baru lahir terutama berat badan lahir, panjang badan lahir dan lingkar kepala. Hal ini merupakan langkah penting sebagai upaya untuk mencegah kejadian *wasting* pada balita.

Kata Kunci: Status gizi ibu, kesehatan bayi baru lahir, wasting

ABSTRACT

Introduction: Toddler nutrition problems hinder cognitive development and result in chronic diseases that can impact quality of life later in life. Intrauterine factors such as maternal nutrition during pregnancy, have an impact on fetal weight. External factors such as exclusive breastfeeding, parenting, and environmental sanitation. The prevalence of nutritional problems such as stunting in NTT Province is the highest in Indonesia.

Purpose: This study aims to determine the direct and indirect impact of maternal nutritional status and newborn health on toddler nutrition problems.

Methods: This research is a correlational analytical research with a cross-sectional method approach. The correctness of the formulated theoretical concepts was tested using Structural Equation Modeling (SEM) with a Partial Least Square (PLS) approach with the application of smart PLS 3.0.

Results: Maternal nutritional status significantly affected newborn health (T-statistic above rule of thumb of 2.545). Newborn health has an impact but does not significantly affect toddler nutrition problems (wasting) with a T-statistic value above the rule of thumb which is 1.081. Maternal nutritional status has an impact but does not significantly affect the nutritional problems of toddler nutrition (wasting) with a T-statistic value above the rule of thumb, which is 0.131.

Conclusion: The interaction between maternal nutritional status (BMI and upper arm circumference) had a positive impact of 11.9% on newborn health and simultaneously (maternal nutritional status and newborn health) had a positive impact of 3% on toddler nutrition problems (wasting). Increasing the nutritional status of mothers (BMI and upper arm circumference) before pregnancy will improve the health of newborns, especially birth weight, birth length, and head circumference. This is an important step in an effort to prevent wasting events in toddlers.

Advice: Conduct regular health checks before pregnancy, including nutritional status checks to identify maternal nutritional problems.

INTRODUCTION

Maternal and child malnutrition including stunting and wasting is a global problem whose consequences are critical to survival. The high burden of disease caused by malnutrition in women of reproductive age, pregnancy, and children in the first two years of life became one of the focuses of intervention (Black et al., 2013).

In 2020, as many as 149.2 million children under the age of five suffered from stunting, and 45.4 million suffered from wasting (UNICEF et al., 2021). In Indonesia, the prevalence of stunting in 2022 reached 21.6%, while the prevalence of wasting reached 7.7%. East Nusa Tenggara (NTT), is one of the provinces with a high number of nutritional problems. NTT has the highest position of stunting (36.3%) and wasting occupies the sixth position with an incidence rate of 10.7% (Kemenkes, 2023). Based on data from the Kupang City Health Office, the electronic results of community-based nutrition recording and reporting (e-PPGBM) show that the incidence of stunting and wasting toddlers in 2022 is 21.5% and 11.2%. Furthermore, the incidence of stunting and wasting in Alak Village is 26.9% and 15.7%.

Maternal nutrition plays an important role in fetal growth, infant health and survival, and long-term child health and development. From the time of conception, the mother is the only nutrient for the growth and development of the fetus until 6 months after birth when exclusive breastfeeding. Maternal malnutrition during pregnancy is a major determinant of poor fetal growth and stunting. Mothers with a height of < 145 cm or a BMI of < 18.5 during early pregnancy are at greater risk of giving birth to small babies, further estimated to contribute around 20% to stunting cases globally (Young et al., 2018).

In Indonesia, nutritional problems in pregnant women that often occur are chronic energy deficiency and anemia. In 2022, the incidence rate of pregnant women with chronic energy deficiency is 8.41%, while the incidence rate in NTT is 17.10%. This shows that the incidence of chronic energy deficiency in NTT is relatively high when compared to the target set by the Indonesian Ministry of Health, which is 13% (Kemenkes, 2023). Intra and extrauterine factors can cause nutritional problems such as stunting. Chronic nutritional deficiency of the mother from conception to birth is an intrauterine factor. This leads to small fetal size indicated by low body weight or short birth lengt (Lada, 2019).

Based on the description above, nutritional problems such as stunting and wasting can be prevented. Finding curable risk factors early will reduce the prevalence of stunting and wasting. Therefore, researchers are interested in conducting a study on the history of maternal nutritional status and newborn health in toddlers with nutritional problems (stunting and wasting) in Alak Village.

RESEARCH METHODS

This type of research is correlational analytical research with a cross-sectional method approach. This study focused on examining the effect of maternal nutritional status during pregnancy and newborn health on toddler nutrition problems. The correctness of the formulated theoretical concepts was tested using Structural Equation Modeling (SEM) with a Partial Least Square (PLS) approach with the help of the PLS smart application version 3.0. The research will be conducted in the Alak Village area of Kupang City in August 2023.

The population in this study was mothers who had children under five with nutritional problems (stunting and wasting). The sample used was 70 mothers and children with inclusion criteria who had children aged 12-59 months and lived in the same house with children. Mothers aged < 20 years, a history of cardiovascular disorders before pregnancy, a history of diabetes and chronic hypertension, a history of multiple pregnancies, and children who have body deformities are not included.

Data collection begins by collecting data on toddlers who are stunted and wasting with documentation methods, namely checking and recording the necessary data, namely maternal age, maternal weight, maternal height, hemoglobin level status, upper arm circumference, child's birth weight, gestational age at delivery, birth length, and head circumference obtained from maternal child health books and integrated healthcare center registers. The primary data is to take direct measurements using micro toise or line boards and scales to determine the child's weight and height.

Data from research that has gone through various stages of processing is then analyzed. Data

analysis using SPSS software and Smart PLS application. The types of data are as follows: Univariate analysis, conducted to get an idea of the distribution of respondents on each variable or latent construct based on the research objectives. Furthermore, multivariate analysis, performed for testing measurement models (outer models) is intended to test construct validity and reliability. Structural model testing, to test direct and indirect relationship prediction models using Structural Equation Modeling (SEM) with a Partial Least Square (PLS) approach using the help of the Smart PLS application version 3.0. The latent variable in question is the history of the mother's nutritional status, the health of the newborn and the toddler nutrition problems. Each latent construct has several measures or indicators which are described as follows:
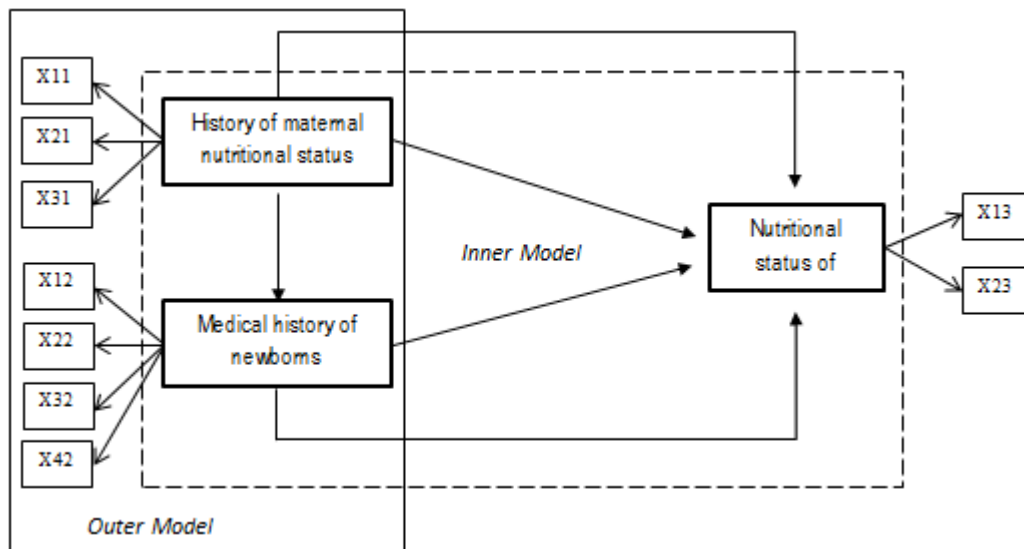
Figure 1. Model of factors that influence child growth

Description:
X11: Body mass index

X21: Hemoglobin level
X31: Upper arm circumference

X12: Birth weight
X22: Birth length
X32: Head circumference
X42: Age at birth
X13: TB/U
X23: BB/TB

RESULTS
Evaluate the outer model
Outer model testing specializes in how latent constructs are measured through observed indicators. Outer model testing uses two main parameters, namely construct validity (convergent validity and discriminant validity) and reliability. In this study before running data was carried out, the X21 indicator (Hemoglobin levels during pregnancy) had the same value in all respondents (Hemoglobin >10 g / dL or not anemia) so it must be eliminated before running data is carried out.

The convergent validity test of the outer model using reflective indicators is assessed based on the loading factor. In this study, the loading factor value used was >0.7 (Ghozali & Latan, 2015). An indicator should be eliminated if the loading factor value <0.7 (Jaya & Sumertajaya, 2008). Here are the results of the loading factor value.
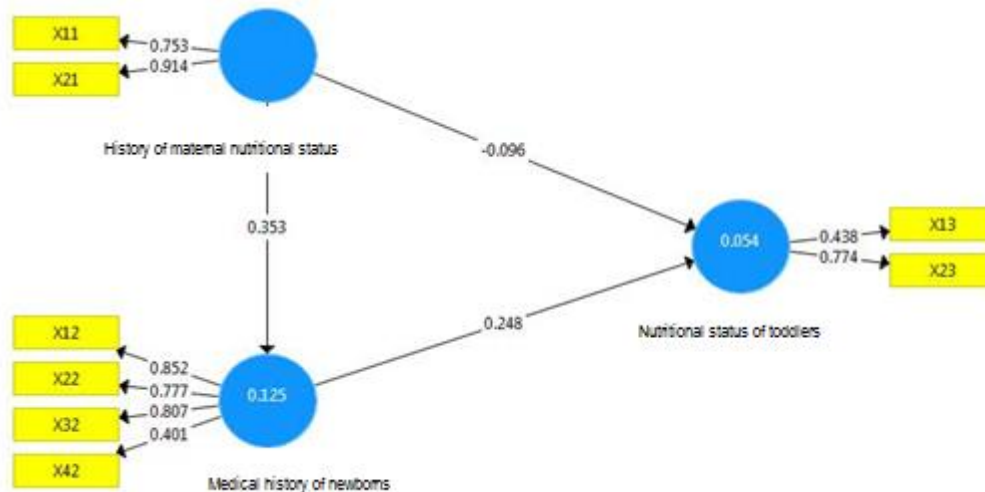
Figure 2. Path chart with loading factor values

Based on figure 2 by eliminating the smallest value and running data, a new diagram is produced as follows:

Based on Figure 3, the indicators X42 and X13 have been eliminated because they do not meet the loading factor value. Furthermore, based on the loading factor value, the resulting AVE value is presented in the following table:
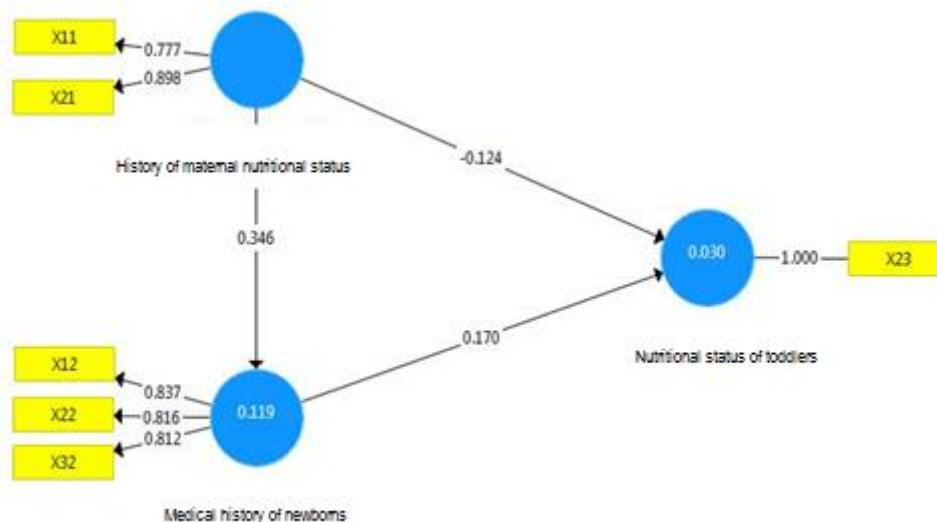

Figure 3. The path chart includes the loading factor value after the elimination of the indicator.

Table 1
Average Variance Extracted (AVE) Value)

Construct	AVE	Description
History of maternal nutritional status	0,675	Qualify
Medical history of newborns	0,705	Qualify
Nutritional status of toddlers	1.000	Qualify

The AVE value shown in the table above has met the minimum standard criterion of >0.5. This indicates that the convergent validity criteria have been met. Test discriminant validity. The discriminant validity measurement is assessed based on the cross-loading measurement with its construct. Cross-loading values are presented in the following table:

Table 2
Cross loading value

Indicators	History of maternal nutritional status	Medical history of newborns	Nutritional status of toddlers
X11	**0,777**	0,211	-0,164
X21	**0,898**	0,350	0,021
X12	0,236	**0,837**	0,271
X22	0,286	**0,816**	0,011
X32	0,330	**0,812**	0,019
X23	-0,065	0,127	**1,000**

Table 2 shows that the correlation of each construct with its indicator is higher than the correlation of the indicator with other constructs. So it can be concluded that the measurement model built in this study has met the discriminant validity test. In addition to looking at the cross-loading value, discriminant validity measurements from the measurement model can be assessed by comparing the AVE root for each construct with the correlation between constructs with other constructs in the model. The model has good discriminant validity if the AVE root for each construct is greater than the correlation between constructs and other constructs in the model.

Table 3
AVE root value

Construct	Medical history of newborns	History of maternal nutritional status	Nutritional status of toddlers
Medical history of newborns	0,822		
History of maternal nutritional status	0,346	0,840	
Nutritional status of toddlers	0,127	-0,065	1.000

The table above shows that diagonal is the root value of AVE and the value below is the correlation between constructs. So it can be seen that the AVE root is higher than the correlation value between constructs, it can be concluded that the model in this study has been valid because it has met discriminant validity.

Construct reliability
The reliability measurement in this study used is to look at the value of composite reliability (>0.7). Composite reliability values are presented in the following table:

Table 4
Construct Reliability

Construct	Composite reliability	Description
History of maternal nutritional status	0,826	Qualify
Medical history of newborns	0,862	Qualify
Nutritional status of toddlers	1,000	Qualify

The table above shows that the Composite reliability value of each latent construct is more than >0.7 so it is concluded that the measurements used in this study are reliable.

Inner Model Testing
The inner model in PLS uses the value of R^2 for the dependent construct, the value of path coefficients, or the t-value of each path for a significant test between constructs in the structural model. The value of R^2 is used to measure the degree of variation of change of the independent variable to the dependent variable. The higher the value of R2 the better the predictive model of the proposed research model. The value of R^2 is presented in the following table:

Table 5
R-Square value (R²)

Latent Construct	R-Square (R²)
Medical history of newborns	0,119
Nutritional status of toddlers	0.030

From the table above, it can be seen that the R-squared value produced by each variable is in the weak category. Furthermore, the path coefficients and T-statistic values of each path are presented in the following table:

Table 6
Path coeffisients on inner model testing

Construct	Original Sample	Sample Mean	Standard Deviation	T-statistic	Description
Medical history of newborns -> Nutritional status of toddlers	0,170	0,183	0,157	1,081	Not significant
History of maternal nutritional status -> Medical history of newborns	0,346	0,382	0,136	2,545	Significant
History of maternal nutritional status -> Nutritional status of toddlers	-0,124	-0,118	0,131	0,131	Not significant

The table above provides an overview of the magnitude and direction of influence between variables or latent constructs in the model. From the results of the path coefficient, it can be seen that all variables are positive values seen from the results of the T-statistic with a significance value of. This shows that the hypothesis in this study is accepted. Where there is 1 relationship of variables that have a positive and significant effect (T-statistic > 1.96) and 2 variable relationships that have a positive but not significant effect (T-statistic < 1.96). Furthermore, the complete model structure and weight value of influence between latent variables, both directly and indirectly, are presented in the following figure:
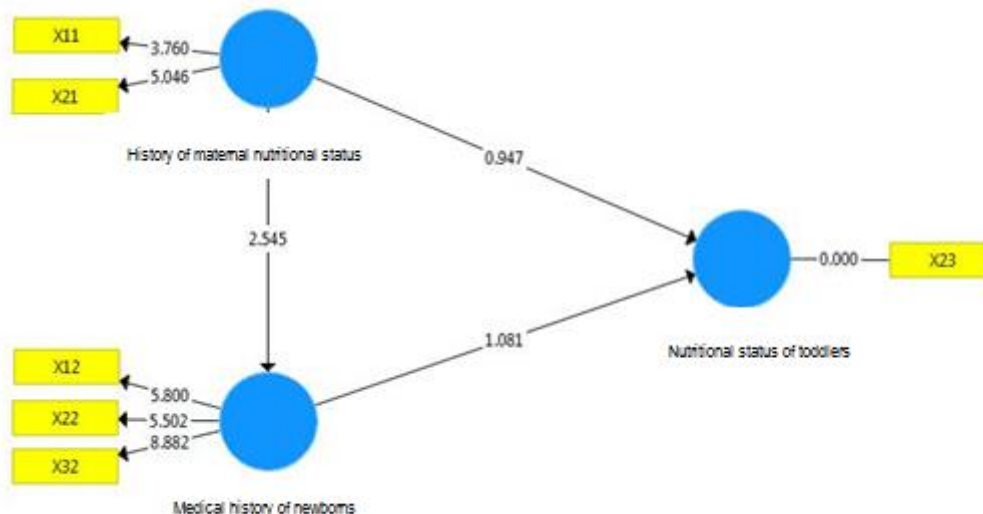

Figure 4. Structural model (Inner model)

DISCUSSION

The results of the path coefficient test found that the maternal nutritional status history variable had a significant direct effect on the health of the newborn based on the T-statistic value above the rule of thumb (>1.96), namely 2.545. In Indonesia, the most common nutritional problems among pregnant women are chronic energy deficiency (CED) and anemia (Werdani, 2023). In 2022, the incidence rate of pregnant women with CED will be 8.41%, while the incidence rate in NTT will be 17.10%. This shows that the incidence of chronic nutritional deficiency in NTT is relatively high when compared to the target set by the Indonesian Ministry of Health, namely 13% (Young et al., 2018). The upper arm circumference threshold for CED risk is 23.5 cm. This means that pregnant women at risk of CED are expected to give birth to LBW babies.

Pregnant women who experience CED have a 2.8 times chance of giving birth to a low birth weight baby (Hartiningrum & Fitriyah, 2016). The history of the mother's nutritional status is an important factor in fetal growth and development. If there is a lack of nutritional status at the beginning of life, it will have an impact on the next life such as Intrauterine growth restriction (IUGR), low birth weight (LBW), small, short and thin, low endurance and the risk of death (D. Nenogasu et al., 2020).

Anemia in pregnancy is higher in developing countries with a prevalence of 43% and in developed countries, it is 9%. Hemoglobin levels greatly influence the weight of the baby to be born. Anemia has negative impacts on mothers such as infections and postpartum hemorrhage, IUGR, low birth weight, prematurity, and abortion (Utami, 2022). Apart from that, the impact of anemia on pregnant women includes shortness of breath, fatigue, palpitations, hypertension, sleep disorders, preeclampsia, and even maternal death (Sululinggi et al., 2021).

Pregnant women with anemia not only endanger the life of the mother but also disrupt growth and development and endanger the life of the fetus. This is caused by a lack of nutrient and oxygen supply to the placenta which will affect the function of the placenta for the fetus (T. Wahyuni & Diansabila, 2021). Poor maternal nutritional status in mothers with a thin BMI causes a decrease in blood vessel expansion, causing an inadequate increase in cardiac output and causing a decrease in blood flow to the placenta, and a decrease in nutrient transfer, causing fetal growth retardation (Cunningham et al., 2014).

The results of other studies show that a BMI <18.5 kg/m2 significantly influences low birth weight. Pregnant women with a BMI <18.5 kg/m2 are twice as likely to give birth to babies with low birth weight. BMI <18.5 kg/m2 indicates chronic malnutrition (Demelash et al., 2015). In addition, chronic nutritional deficiency in the mother since conception is an intrauterine factor that causes small fetal size as indicated by low birth weight or short birth length (Lada, 2019). Arm circumference indicates a chronic lack of protein energy. Chronic nutritional deficiency is a condition caused by unbalanced nutritional intake between protein and energy so that the nutrients needed by the body are not met (Zulfikar et al., 2023)

Globally, in 2016 the presentation of chronic nutritional deficiency in pregnant women was 73.2%. The percentage of pregnant women with chronic nutritional deficiency in Indonesia is 8.41%. This is very important to pay attention to (Kusumastuti et al., 2023). Chronic nutritional deficiency pregnant

women are at risk of giving birth to babies with LBW, short birth length, as well as stunting in children (Simbolon & Rahmadi, 2022). The nutritional status of the mother plays an important role in the growth of the fetus, the health and survival of the baby as well as the long-term health and development of the child and is one indicator in measuring the nutritional status of the community (Kulsum & Wulandari, 2022). Since conception, the mother is the only nutrition for the growth and development of the fetus until 6 months after birth when exclusively breastfed. Maternal nutritional deficiencies during pregnancy are the main determinant of poor fetal growth and stunting. Mothers with a height < 145 cm or a BMI < 18.5 during early pregnancy are at greater risk of giving birth to small babies, which is estimated to contribute around 20% to stunting cases globally (Young et al., 2018). The results of the inner model evaluation using R2 (Table 5) show that the history of maternal nutritional status influences the health of newborn babies by 11.9% (R2: 0.119), while the rest is explained by other factors not included in this research model.

The relationship between newborn health has a positive but not significant effect on under-five nutritional problems (wasting) based on a T-statistic value of 1.081 (Rule of thumb <1.96). The health of newborn babies, which is reflected through birth weight, body length, and birth head circumference, is an important indicator that can influence toddler nutrition problems, this is proven by the positive influence it produces. Low birth weight has a strong correlation with body length and malnutrition in childhood. The incidence of LBW in NTT province is 4.5%. This shows that the incidence of LBW is still high when compared with the national incidence rate of 2.5% (Kementerian Kesehatan RI, 2022). The baby's weight at birth is an important determinant of the chances of survival, growth, and development. Mothers with good nutrition will give birth to healthy babies. On the other hand, mothers who experience nutritional deficiencies have a risk of giving birth to LBW babies (Hartiningrum & Fitriyah, 2016).

This is supported by other research where the condition of newborns with LBW significantly influences the incidence of wasting and will be exacerbated if the mother experiences CED. If a baby is born with LBW there is a risk of death, malnutrition, growth disorders, and developmental disorders during childhood. Babies with LBW are one of the determining factors for short-term problems. This indicator is an outcome indicator of the mother's nutritional condition during pregnancy (S. Wahyuni et al., n.d.). Intra- and extrauterine factors can cause nutritional problems such as stunting. Chronic

maternal nutritional deficiency from conception to birth is an intrauterine factor. This causes small fetal size which is indicated by low birth weight or short birth length. Extra-uterine factors that influence include exclusive breastfeeding and complementary foods (Lada, 2019). The results of the inner model evaluation using R2 (Table 5) show that together the nutritional status of the mother and the health of the newborn influence the nutritional status of the child by 3% (R2: 0.030), while the remainder is explained by other factors not included in this research model.

CONCLUSION

Based on a review of theories, the results of other researchers, and current research, it was found that there is a positive influence on the health of newborns directly on the incidence of wasting, so it becomes very important to optimize growth during pregnancy. Efforts that must be made are to prepare the nutritional status of the mother before pregnancy so that the resulting pregnancy output is a baby with normal weight, body length, and head circumference.

SUGGESTION

It is necessary to conduct a holistic study on toddlers with nutritional problems which include intra and extrauterine factors to provide an overview of the factors that affect nutritional problems. This helps in formulating a priority plan of interventions that can be done for the prevention and treatment of infant nutrition problems.

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THE EFFECT OF ANIMATED *IBISKUS* MEDIA ON THE MOTIVATION TO EXECUTE PREGNANCY EXERCISES

Alyxia Gita Stellata[1], Ecih Winengsih[2], Dwi Yulihartini[3]

[1,2]Department of Midwifery, Faculty of Health Science, Universitas Bhakti Kencana, Bandung, Indonesia
[1]Center for Health System Study and Health Workforce Education Innovation, Faculty of Medicine, Universitas Padjadjaran, Indonesia
[1,3]Applied Bachelor of Midwifery Study Program, Health Polytechnic of Health Ministry Bengkulu, Indonesia
*Email correspondence: alyxia.gita@bku.ac.id

ABSTRAK PENGARUH MEDIA IBISKUS ANIMASI TERHADAP MOTIVASI MELAKUKAN LATIHAN KEHAMILAN

Latar Belakang: Partus lama memberikan kontribusi pada angka kematian ibu dan angka kematian bayi baru lahir. Salah satu solusi untuk mengatasi partus lama adalah dengan melaksanakan senam hamil. Namun terdapat kendala dalam kontinuititas pelaksanaan yang disebakan oleh rendahnya motivasi sehingga dibutuhkan suatu media pembelajaran untuk meningkatkan motivasi ibu hamil yaitu Ibiskus animasi.

Tujuan: Tujuan dari penelitian ini adalah untuk mengetahui pengaruh media Ibiskus animasi terhadap motivasi ibu hamil dalam pelaksanaan senam hamil.

Metode: Jenis penelitian ini menggunakan metode kuantitatif dengan rancangan quasi eksperimen two groups pre and post test dengan sample yang berjumlah 30 orang yang diambil dengan cara accidental sampling. Teknik pengumpulan data menggunakan data primer berupa kuesioner. Analisis data menggunakan Wilcoxon dan Mannwhitney p < 0,05.

Hasil: Hasil uji wilcoxon pada kelompok Ibiskus adalah p=0.001 dan kelompok leaflet adalah p=0.026. Hasil uji Mannwhitney antar kedua kelompok adalah p=0.004.

Kesimpulan: terdapat perbedaan efektivitas penggunaan Ibiskus dan leaflet dalam meningkatkan motivasi ibu hamil dengan media Ibiskus animasi lebih efektif daripada leaflet (difference mean 2.33).

Saran: Diharapkan bagi bidan mampu menggunakan media Ibiskus animasi untuk meningkatkan motivasi ibu hamil dalam pelaksanaan senam hamil yang komprehensif.

Kata kunci: Ibiskus Animasi; Leaflet; Motivasi, Senam hamil;

ABSTRACT

Background: Prolonged labor contributes to maternal mortality and newborn mortality. One solution to overcome prolonged labor is to carry out pregnancy exercises. However, there are obstacles to the continuity of implementation caused by low motivation. Thus, learning media is needed to increase the motivation of pregnant women named Ibiskus animation.

Purpose: The purpose of this study was to determine the effect of animated Ibiskus media on pregnant women's motivation to implement pregnancy exercise.

Methods: This type of research uses quantitative methods with a quasi-experimental design of two groups pre and post-test with a sample of 30 people taken by accidental sampling. The data collection technique used primary data in the form of a questionnaire. Data analysis using Wilcoxon and Mann-Whitney $p < 0.05$.

Results: The Wilcoxon test result in the Ibiskus group was p=0.001 and the leaflet group was p=0.026. The Mann-Whitney test result between the two groups was p=0.004.

Conclusion: In conclusion, there are differences in the effectiveness of using Ibiskus and leaflets in increasing the motivation of pregnant women with animated Ibiskus media more effectively than leaflets (difference mean 2.33).

Suggestion: It is expected that midwives will be able to use animated Ibiskus media to increase pregnant women's motivation to implement comprehensive pregnancy exercises.

Keywords : Prolonged Labour; Pregnancy exercise; Animated Ibiskus; Leaflet; Motivation

Alyxia Gita Stellata, Ecih Winengsih, Dwi Yulihartini

INTRODUCTION

One of the causes of high maternal and perinatal mortality in Indonesia and other developing countries is prolonged labour (Semmagga & Fausyah, 2021). Prolonged labour contributes to high maternal mortality and newborn mortality rates. Prolonged labour caused maternal mortality of 8% globally and 9% in Indonesia, while newborn mortality was 26% globally and 30% in Indonesia in 2007 (Riyanto & Adifa, 2016). Generally, the labour process in normal mothers occurs in less than 24 hours, divided into four stages. The latent phase lasts eight hours, and the active phase lasts seven hours. Stage II labor usually lasts two hours in primigravida and one hour in multigravida. Stage III lasts less than 30 minutes, while stage IV starts from the birth of the placenta until the first two hours postpartum (Kurniarum, 2016). Three factors cause prolonged labour: energy, birth canal, and fetus. Abnormalities in the power factor can be caused by the occurrence of hiss that does not follow its phase, irregular hiss, no coordination and synchronization between the contractions of its parts (incoordinate), and hiss that is too strong and too frequent so that there is no relaxation of the uterus (tetanic). The above can cause labour congestion; if not treated immediately, it will result in fetal distress, and the mother's uterus can rupture (Semmagga & Fausyah, 2021).

Efforts that can be made by pregnant women so that labour runs smoothly can be controlled by doing pregnancy exercises (Semmagga & Fausyah, 2021). It is supported by the government's program to reduce maternal morbidity and mortality rates by conducting an integrated antenatal care program. Integrated antenatal care is comprehensive and quality care for all pregnant women (Tandiono, 2017). The increase in endorphins during pregnancy exercises naturally functions as a pain reliever during childbirth, so it dramatically helps speed up the birth process (Azis et al., 2020). Following the study results, doing pregnancy exercises facilitates the labor process in Stage II (Septiana, 2018). However, most pregnant women choose not to do pregnancy exercises and tend to reduce household chores and work activities. It is due to feeling uncomfortable during pregnancy exercises, fear of harming the fetus, having a history of abortion or infertility, low education and income levels, and taking care of children at home are problems that are often associated with decreased activity (Nascimento, 2015). So, one factor that influences pregnant women to participate in pregnancy exercises is internal factors consisting of knowledge, attitudes, and motivation (Hidayah et al., 2014). Motivation is the drive contained in a person to try to make changes in behavior that are better at meeting their needs (Uno, 2016). In general, the purpose of motivation is to move someone so that there is a desire and willingness to do something so that they can get results and achieve goals (Makki & Aflahah, 2019). Factors that influence the lack of motivation to do pregnant gymnastics are physical factors, mental processes, heredity, environment, age maturity, facilities (facilities and infrastructure), and media (Yulianti & Halimatussaadiah, 2017).

A study said that most pregnant women who had less motivation to do pregnancy exercises did not get information from mass media/sources about pregnancy exercises (86.8%). The source of information is the amount of data mothers have obtained regarding pregnancy exercises. One factor influencing a person's knowledge about something is the amount of information received about something (Yulianti & Halimatussaadiah, 2017). The source of data can be obtained through mass media, such as print media (newspapers, magazines, books, tabloids, etc.), electronic media (television, radio, internet), as well as through health workers (Jatmika et al., 2019). The knowledge gained will affect pregnant women's motivation toward their pregnancy exercises (Yulianti & Halimatussaadiah, 2017). Animation-based information sources are a form of audio-visual media known as an attractive health education method. One of the advantages of animation is that the information obtained is stored in long-term memory (Suhartika & Mulyati, 2021).

Thus, in this research, we want to motivate pregnant women to implement pregnancy exercises through the animated Ibiskus media. Ibiskus (Iklan Layanan Masyarakat berBasIS Karakteristik Unsur Sosial-budaya) is a public service advert based on the characteristics of socio-cultural elements, in this case Bengkulu Culture. The media is expected to make pregnant women more interested in seeing it because it is equipped with supporting scenes and sounds. Ibiskus animation is an advertisement containing material from pregnant exercises, starting from the definition, benefits, objectives, requirements, contraindications, and stages of pregnancy exercises. Hopefully, this Ibiskus community service advert will increase the respondents' motivation.

RESEARCH METHODS

This type of research uses a quasi-experimental two groups, pre-and post-test, to

determine the effect of animated Ibiskus media on pregnant women's motivation to implement pregnant exercises in Bengkulu City in 2018. The sample in this study amounted to 30 people divided into two groups: the intervention group with animated Ibiskus (15 people) and the control group with leaflets (15 people). Sampling method using an accidental sampling technique. Before and after the intervention, respondents will fill out a questionnaire sheet to measure the increase in motivation. The inclusion criteria were: never done pregnancy exercises, primigravida mother, TM II - TM III, domiciled in the research location, and willing to be a respondent. This research was conducted at PMB Midwife Susi Irma Novia, SST, in November 2018. The data used in this study were primary. Data analysis used univariate analysis (frequency

distribution) and bivariate (Wilcoxon and Mann Whitney) using SPSS.

RESEARCH RESULT

This study was conducted to determine the difference in effectiveness between the use of animated Ibiskus and leaflets in increasing the motivation for implementing pregnancy exercises with 30 respondents.

Univariate Analysis

Distribution of respondent characteristics and frequency distribution of motivation of pregnant women in the implementation of pregnancy exercises

Table 1.
Distribution of Respondent Characteristics

Respondent Characteristics	Ibiskus	Leaflet	p-value
	Frequency (n=15)	Frequency (n=15)	
Age (year)			
<20	0(0%)	1(6.7%)	
20-35	14(93.3 %)	11(73.3%)	0.608
>35	1(6.7%)	3(20%)	
Total	15(100%)	15(100%)	
Education			
High: High School-University	13(86.7%)	12(80%)	
Low: Elementary-Middle School	2(13.3%)	3(20%)	0.630
Total	15(100%)	15(100%)	
Parents' occupation			
Employed	6(40%)	5(33.3%)	
Not working	9(60%)	10(66.7%)	0.710

Table 1 shows the characteristics of both groups that the most age in the Ibiskus intervention group who became research subjects was in the age range of 20-35 years, namely 14 people (93.3%), and in the leaflet intervention group, as many as 11 people (73.3%). In both groups, most had a high level of education, namely 13 people (86.7%) in the Ibiskus intervention group and 12 people (80%) in the leaflet intervention group. Most pregnant women in both groups did not work, namely 9 people (60%) in the Ibiskus intervention group and 10 people (66.7%) in the leaflet intervention group.

Analysis of the questionnaire of motivation for pregnancy exercise using descriptive statistical analysis of the average based on the value given based on the results of the questionnaire that has been answered. The criteria used to describe the research average of the observation results are: 1. STS = Strongly Disagree, TS = Disagree, 3. RR =

Undecided, 4. S = Agree, 5. SS = Strongly Agree. The range of each category is determined using a statistical equation adjusted to the data. The number of aspects observed is 15: Maximum score = 15 x 4; Minimum score = 15 x 1.

Interval : $\dfrac{Maximum\ Score - minimum\ score}{Number\ of\ aspects}$

Tabel 2.
Motivation Score Interval

Score	Category
15-30	Very low
31-45	Low
46-60	Medium
61-75	High

Tabel 3.
Frequency Distribution of Pregnant Women's Motivation in Implementing Pregnancy Exercises

Motivasi	Intervensi			
	Ibiskus		Leaflet	
	Before	After	Before	After
Very low	0(0%)	0(0%)	0(0%)	0(0%)
Low	1(6.7%)	0(0%)	0(0%)	0(0%)
Medium	7(46.7%)	3(20%)	11(73.3%)	9(60%)
High	7(46.7%)	12(80%)	4(26.7%)	6(40%)

Table 3 above shows that most pregnant women, before being given the Ibiskus intervention, had moderate and high motivation towards pregnancy exercises (46.7%). After being given the Ibiskus intervention, most followed a high level of motivation (80%). Meanwhile, most of the pregnant women before (73.3%) and after (60%) given the leaflet intervention had moderate motivation.

Bivariate Analysis

The difference in the average increase in motivation in the Ibiskus animation and leaflet groups in the implementation of pregnancy exercises and the difference in effectiveness between the two media Ibiskus animation and leaflet.

Tabel 4.
Differences in the motivation of pregnant women before and after the *Ibiskus* and Leaflet interventions

Group		Minimum-Maximum	Mean (±SD)	P Value
Ibiskus	Before	42-68	59.6(±7.2)	0.001
	After	53-72	65.87(±5.4)	
Leaflet	Before	51-68	56.9(±4.6)	0.026
	After	55-69	60.2(±3.9)	

Tabel 5.
Comparison of the effectiveness of the *Ibiskus* and leaflet intervention groups in increasing motivation to perform pregnancy exercises

Group	N	Mean Rank	Difference in Mean	P Value
Ibiskus	15	8	2.33	0.004
Leaflet	15	5.67		

In the Ibiskus group, there was an increase before and after the intervention from an average of 59.6 (±7.2) to 65.87 (±5.4). There was a statistically significant difference in knowledge improvement in the Ibiskus group with a p-value of 0.001 (<0.05).In the leaflet group, there was also an increase in motivation before and after the intervention from an average of 56.9 (±4.6) (±16.6644) to 60.2 (±3.9). There was also a statistically significant difference in the increase in motivation in the leaflet group, with a p-value of 0.026 (<0.05).

The average increase in motivation in the video group was 8 higher than the average in the leaflet group, which was 5.67. Statistically, there is a significant difference in the increase in motivation in the Ibiskus group compared to the leaflet group, with a p-value of 0.004 (<0.05) where health promotion of the implementation of pregnant exercises using Ibiskus is more influential in increasing the motivation of pregnant women compared to using leaflets.

DISCUSSION

The results of this study state that there is an increase in motivation for implementing pregnant exercises in the Ibiskus animation intervention group (p=0.001). There was an increase in motivation before the Ibiskus intervention, from 7 people (46.7%) to 12 people with high motivation (80%). This result follows other studies that show the effect of health education using video media on the readiness of mothers to face childbirth (p-value = 0.000) (Lisnawati & Prahastuti, 2021). In health education for pregnant women, video media is more valuable and easy to use to provide health

information, especially about pregnancy, such as pregnancy danger signs. Video media containing sight and hearing senses will be easier to understand. They can increase the knowledge of pregnant women compared to e-booklets that only have a sense of sight (Widuri et al., 2021). The results of this study also stated an increase in motivation for implementing pregnancy exercises in the leaflet intervention group (p=0.026). There was an increase in motivation before being given the Ibiskus intervention, from 4 people (26.7%) to 6 people (40%) who had high motivation. Most respondents in the leaflet group had moderate motivation both before treatment (73.3%) and after treatment (60%). In contrast to previous research, which states that there is no significant difference in motivation before and after the provision of health education in the leaflet group with p-value = 0.063 > 0.05 (α) (Sa'diyah et al., 2020).

Therefore, based on the Mann-Whitney test, this study states a significant difference in motivation increase in the Ibiskus animation group compared to the leaflet group with a p-value of 0.004 (<0.05). This is similar to a study that stated that both media increased the knowledge of pregnant women with a p-value of 0.000 for videos and a p-value of 0.000 for e-booklets. It was also found that videos were more effective than e-booklets in increasing the knowledge of pregnant women (p-value 0.031) (Widuri et al., 2021). The knowledge gained will affect pregnant women's motivation toward their pregnancy exercises (Yulianti & Halimatussaadiah, 2017). In line with previous research, there is a significant difference in motivation before and after providing health education in the video intervention group with a p-value of 0.039 <0.05 (α) and states that video media is more effective than leaflet media on the motivation to do pregnant exercises in pregnant women (Sa'diyah et al., 2020).

According to previous research, research subjects given health education using videos will more easily understand information because it activates more senses than just using leaflets. Information from this video will increase client understanding so that they have better knowledge. Following the theory that video media has many advantages over other media, including being able to be repeated if necessary to add clarity, the message conveyed is quickly received and easily remembered; videos can encourage and increase motivation to keep paying attention (Saban, 2017). Providing classes for pregnant women using videos will make pregnant women more interested in the material presented and can be repeated at any time at home (Sari, 2019). This study used the Ibiskus

video as an animated (moving image) culture-based public service advertisement.

CONCLUSION

It can be concluded that the Ibiskus animation media (p=0.001) and leaflets (p=0.026) can increase the motivation of pregnant women in the implementation of pregnant exercises with Ibiskus animation media more effectively than leaflet media (0.004).

SUGGESTION

Suggestions from researchers hope that midwives can use Ibiskus animation in providing pregnant exercise material in pregnant women's classes and hopefully be more creative in creating learning media that can increase motivation in the implementation of pregnant exercises. Meanwhile, the new animated Ibiskus media was tested on less than 30 respondents, so it is hoped that in further research, it can be tested on more respondents to get more improvements before mass use.

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Maisaroh, Nurliyani , Ike Ate Yuviska

THE EFFECT OF GINGER INFUSION ON NAUSEA AND VOMITING IN FIRST TRIMESTER PREGNANT WOMEN

Maisaroh[1], Nurliyani [2*], Ike Ate Yuviska[3]

[1]Diploma IV Program Midwifery Faculty of Health Sciences, Malahayati University
Email korespondensi : nurliani@malahayati.ac.id

ABSTRAK : PENGARUH SEDUHAN JAHE TERHADAP MUAL DAN MUNTAH PADA IBU HAMIL TRIMESTER PERTAMA

Latar belakang : World Health Organization (WHO) memperkirakan bahwa sediktnya 15% dari semua wanita hamil memerlukan perawatan obstetrik yang terlatih dan bila tidak maka wanita tersebut akan mengalami kesakitan kecacatan yang serius dan berkepanjangan. Kejadian emesis gravidarum pada ibu hamil didunia menurut WHO berkisar 14% (Akbar, 2022). Mual dan muntah adalah gejala yang sangat umum yang dapat disebabkan oleh berbagai macam kondisi. data kunjungan ibu hamil di Wilayah Kerja Puskesmas Gedung Negara pada tahun 2022 sebanyak 467 ibu hamil dan yang mengalami mual muntah sebanyak 362 (77,5%) ibu. Upaya untuk mengurangi frekuensi muntah dapat diberikan beberapa tindakan seperti air seduhan jahe. Tujuan penelitian diketahui pengaruh seduhan air jahe dengan mual muntah ibu hamil TM I di Wilayah Puskesmas Gedung Negara tahun 2023.

Jenis penelitian kuantitatif dengan desain *quasi eksperiment* dengan pendekatan *one group pretest-postest desain.* Populasi / subjek yang diambil dalam penelitian ini adalah seluruh ibu hamil di Wilayah Puskesmas Gedung Negara dengan sampel ibu hamil TM I yang mengalami mual muntah sebanyak 30 responden. Penelitian telah dilaksanakan di Wilayah Puskesmas Gedung Negara tahun 2023 pada bulan April 2023. Pengumpulan data menggunakan lembar observasi, analisis data secara univariat dan bivariat (*uji wilcoxon*).

Hasil penelitian Ada pengaruh seduhan air jahe dengan mual muntah ibu hamil TM I di Wilayah Puskesmas Gedung Negara Tahun 2023

Kesimpulan diketahui rata-rata mual muntah sebelum diberikan air seduhan jahe adalah 8,9 dan rata-rata mual muntah setelah diberikan air seduhan jahe adalah 5,1. Ada pengaruh seduhan air jahe dengan mual muntah ibu hamil TM I di Wilayah Puskesmas Gedung Negara Tahun 2023 (p value = 0,000).

Saran diharapkan jahe menjadi salah satu alternative terapi non farmakologis untuk mengatasi mual dan muntah pada ibu hamil sehingga kontak ibu hamil dengan obat–obatan bisa diminimalisir.

Kata Kunci : Mual Muntah ibu hamil dan seduhan air jahe

ABSTRACT

Background: The World Health Organization (WHO) estimated that at least 15% of all pregnant women require trained obstetric care, and without it, these women may experience severe and prolonged pain and disability. The occurrence of gravidarum emesis in pregnant women globally, according to WHO was around 14% (Akbar, 2022). Nausea and vomiting are highly common symptoms that can be caused by various conditions. Data from visits by pregnant women in the working area of Gedung Negara Primary Health Care in 2022 showed a total of 467 pregnant women, of which 362 (77.5%) experienced nausea and vomiting. Efforts to reduce the frequency of vomiting can be addressed through various measures,including the consumption of ginger-infused water. The research aimed to determine the effect of ginger-infused water on nausea and vomiting in first-trimester pregnant women in the working area of Gedung Negara Primary Health Care in 2023.

Research Method: This research was a quasi-experimental design using a one-group pretest-posttest approach. The population/subjects of the study included all pregnant women in the Gedung Negara Primary Health Care, with a sample of 30 first-trimester pregnant women experiencing nausea and vomiting. The research was conducted in the Gedung Negara Primary Health Care area in the year 2023, specifically in April 2023. Data collection was done using observation sheets, and data analysis involved both univariate and bivariate analyses (Wilcoxon test).

The results There was a significant effect of ginger-infused water on nausea and vomiting in first-trimester pregnant women in the Gedung Negara Primary Health Care in 2023.

Conclusion of the study revealed that the average level of nausea and vomiting before consuming ginger-infused water was 8.9, and the average level after consuming ginger-infused water was 5.1. There was a significant effect of ginger-infused water on nausea and vomiting in first-trimester pregnant women in the Gedung Negara Primary Health Care in 2023 (p-value = 0.000).

The suggestion that ginger becomes one of the non-pharmacological alternative therapies to address nausea and vomiting in pregnant women, potentially minimizing their reliance on medication.

Keywords: Nausea Vomiting pregnant women and ginger-infused water

INTRODUCTION

Pregnancy is a process that starts from ovulation, conception, nidation, implantation and development of the embryo in the uterus until aterm (Prawirohardjo, 2018). Pregnancy affects the mother's body by causing physiological changes that occur throughout the organ system, most of the changes are caused by hormonal work. During pregnancy, there can be various pregnancy complications, namely nausea and vomiting which are often experienced by pregnant women, this condition is one of the earliest symptoms of pregnancy.

The World Health Organization (WHO) estimates that at least 15% of all pregnant women require skilled obstetric care and will otherwise suffer serious and prolonged disability. According to the American *Pregnancy Association* (APA) the majority of pregnant women experience some type of morning sickness and there are at least 60,000 cases of *hyperemesis gravidarum* reported to be hospitalized, and the number is estimated to be much higher because many pregnant women are only treated at home or outpatient (*American Pregnancy Association*, 2018).Pregnancy with *hyperemesis gravidarum* according to WHO reaches 12.5% of all pregnancies in the world with incidence rates ranging from 0.3% in Sweden, 0.5% in California, 0.8% in Canada, 10.8% in China, 0.9% in Norway, 2.2% in Pakistan, and 1.9% in Turkey (Tanjung, 2020).

Nausea and vomiting or called *emesis gravidarum* or *morning sickness* is a state of nausea which is sometimes accompanied by vomiting (frequency less than 10 times). During pregnancy, 70-85% of women experience nausea and vomiting (Hastuti, 2021). From the results of Lecasse's research, of 367 pregnant women, 78.47% of nausea and vomiting occurred in the first trimester, with the degree of nausea and vomiting, namely 52.2% experiencing mild nausea and vomiting, 45.3% experiencing moderate nausea and vomiting and 2.5% experiencing severe nausea and vomiting. In the second trimester, 40.1% of women still experience nausea and vomiting with details of 63.3% experiencing mild nausea and vomiting,

35.9% experiencing moderate nausea and vomiting and 0.8% experiencing severe nausea and vomiting (Adnyani, 2021). The incidence of hyperemesis gravidarum in Indonesia is ranging from 1-3% of all pregnancies (Tanjung, 2020).

The incidence of vomiting which is one of the proportions of disorders experienced during pregnancy in women aged 10-54 (WUS) is 20.1% (National Riskesdas Report, Ministry of Health RI 2018). In 2021, the number of pregnant women in Indonesia was 4,884,711, with the highest number in West Java Province with 897,215 and the lowest in North Kalimantan Province with 14,297 mothers while Lampung Province had 160,562 pregnant women. (Indonesian Ministry of Health., 2022). Disorders / complications experienced during pregnancy, based on Riskesdas data such as vomiting as much as 20%, high fever 2.4%, hypertension 3.3%, immobile women 0.9%, bleeding in the birth canal 2.6%, discharge of amniotic fluid 2.7%, swelling accompanied by spasms 2.7%, long cough 2.3%, chest pain 1.6%, and others 7.2% (Riskesdas, 2018).

The number of pregnant women in Lampung Province in 2021, with the highest number in Central Lampung Regency with 22,911 mothers and the lowest in Metro City with 19,447 pregnant women while North Lampung Regency had the fifth highest number of 12,024 pregnant women. (Lampung Provincial Health Office, 2022). Disorders / complications experienced during pregnancy, based on Riskesdas data in Lampung Province such as vomiting as much as 17.2%, high fever 1.8%, hypertension 2.6%, less mobile genitals 0.6%, bleeding in the birth canal 2.2%, discharge of amniotic fluid 1.6%, swelling accompanied by spasms 1.5%, long cough 0.9%, chest pain 0.8%, and others 5.8% (Riskesdas, 2018).

Based on the visits of pregnant women at Negara Ratu Primary Health Care, in 2020 the visits of pregnant women were 283 mothers and those who experienced nausea and vomiting were 152 (53.7%) mothers, in 2021 the visits of pregnant women were 264 mothers and those who experienced nausea and vomiting were 112 (42.2%) mothers and in 2022 the

visits of pregnant women were 273 pregnant women and those who experienced nausea and vomiting were 135 (49.4%) mothers (Medical Record Data of Negara Ratu primary health care, 2023). Based on Ketapang primary health care in 2020 there were 279 mothers and those who experienced nausea and vomiting were 152 (53.7%) mothers, in 2021 pregnant women visits were 285 mothers and those who experienced nausea and vomiting were 148 (51.9%) mothers and in 2022 pregnant women visits were 291 mothers and those who experienced nausea and vomiting were 164 (56.3%) mothers (Medical Record Data of Ketapang primary health care, 2023). Based on data on visits by pregnant women in the Working Area of Gedung Negara primary health care, North Lampung Regency, in 2020 there were 404 pregnant women and those who experienced nausea and vomiting were 289 (71.5%) mothers, in 2021 there were 425 pregnant women and those who experienced nausea and vomiting were 314 (73.8%) mothers and in 2022 there were 467 pregnant women and those who experienced nausea and vomiting were 362 (77.5%) mothers (Medical Record Data of Gedung Negara primary health care, 2023).

Based on data obtained by researchers from Gedung Negara Primary Health Care, the number of pregnant women patients in 2020 was 410 pregnant women and those who experienced mild HEG were 69 (15.1%) pregnant women, in 2021 there were 412 pregnant women and those who experienced mild HEG were 88 (21.3%) pregnant women and in 2022 there were 467 pregnant women and those who experienced mild HEG were 108 (23.1%) pregnant women. (Medical Record Data of Gedung Negara primary health care, 2022).

There is no law specifically regulating the implementation of complementary midwifery services in Indonesia, but the implementation of complementary medicine in general has been regulated in the Minister of Health Decree No.1109/Menkes/Per/IX/2007 on complementary-alternative medicine. For many midwives and women, complementary midwifery care is an option to reduce medical interventions during pregnancy and childbirth, and experience has shown it to be helpful. However, most of these therapies are not considered meaningful in conventional medicine. Complementary therapies or traditional medicine are now being regulated to have a legal aspect. For the Province, the provision of complementary therapies is contained in Governor Regulation No. 55 of 2019 concerning Traditional Medicine.

The results of the study stated that the ginger brew given to respondents was made from 2.5 grams of thinly sliced ginger then brewed with 250 ml of hot water plus 10 grams of white sugar. The ginger brew was drunk 2x1 in a warm state for 4 days. Measurement of the frequency of nausea and vomiting was done every day. Based on the results of the study, it can be concluded that ginger water can reduce nausea and vomiting in the first trimester of pregnancy. Therefore, we believe this water will be effective for the further development of pregnancy patients (Dewi Aprilia, et al 2020).

The results of preliminary studies conducted by researchers on February 4-7, 2023, by looking at the visiting book of pregnant women there were 49 pregnant women in the first trimester (first), as many as 37 (77.0%) pregnant women experienced nausea and vomiting but not excessive, as many as 3 (6.2%) experienced excessive nausea and vomiting, 8 (16.7%) complained of dizziness and others did not have any complaints. Based on the pre-survey data conducted, the data obtained from *antenatal care* visits in January 2023 there were 143 first trimester pregnant women who checked their pregnancy, and obtained first trimester pregnant women who experienced nausea and vomiting there were 31 (21.6%) pregnant women. In overcoming the mother's complaints, health workers provide anti-nausea drugs (vitamin B6 consumed by the mother for 7 days) and counseling on diet. Health workers have not provided counseling related to non-pharmacological practices such as ginger water or asking to reduce nausea and vomiting.

Based on the above background, the researcher is interested in taking the title of the effect of ginger water steeping with Nausea and Vomiting of Pregnant Women TM I in the Gedung Negara Primary Health Care in 2023.

RESEARCH METHODS

This study employed a quantitative research with an analytic survey method. The research was conducted in April 2023 in the Gedung Negara Primary Health Care. analytic research with a *one group pretest-postest design* approach. *The* population in this study were all pregnant women who made visits at the Gedung Negara Health Center recorded in March 2023 the number of visits by pregnant women TM I was 34 people, the sample was 30 respondents. to measure Nausea and vomiting in pregnant women, the measuring instrument used Questionnaire (PUQE). Ginger steeping therapy was given to pregnant women with complaints of nausea and vomiting 2 times a day as much as 250 ml for 4 days in one week. Data analysis used univariate and bivariate with wilxocon test.

RESEARCH RESULTS

Based on table 1 above, it is known that out of 30 respondents with ages 20-35 years as many as

27 (90.0%), respondents with high school education as many as 20 (66.7%), respondents with IRT jobs as many as 24 (80.0%), respondents with primiparous parity as many as 22 (73.3%).

Table 1
Respondent Characteristics

Variables	Category	Total	
		n	%
Age	20 - 35 years	27	90.0
	< 20 and >35 years	3	10.0
Education	SMP (Junior High School)	6	20.0
	SMA (Senior High School)	20	66.7
	Bachelor	4	13.3
Occupation	IRT (Housewife)	24	80.0
	Work	6	20.0
Parity	Primiparous	22	73.3
	Multiparous	8	26.7

Univariate Analysis

Based on table 2 above, the average nausea and vomiting before ginger water was given was 8.9 with a *standard deviation of* 1.7, a minimum value of 6, and a maximum value of 12.

Table 2
Average nausea and vomiting before given ginger water infusion in the Gedung Negara Primary Health Care in 2023

Nausea vomiting	Mean	Sd	Min	Max	N
Before	8,9	1,7	6	12	30

Table 3
Average nausea and vomiting after being given ginger water infusion in the Gedung Negara Primary Health Care in 2023

Nausea vomiting	Mean	Sd	Min	Max	N
After	5,1	0,7	4	6	30

Table 4
Data Normality Test

Hb levels	*Shapiro-Wilk*	Description
Before egg consumption	0.123	Normal
After egg consumption	0.088	Normal

Based on table 3 above, it is known that the average nausea and vomiting after being given ginger water is 5.1 with a *standard deviation* value of 0.7, a minimum value of 4 and a maximum value of 6.

Based on table 4.4 above, the data normality test using *Shapiro-Wilk*, it is known that the hb level data before and after obtained a significant value> 0.05, which means that the data is **normal.**

Bivariate Analysis

Based on table 4 above, the results of the Wilcoxon test, *p-value* = 0.000 (p-value < α = 0.05) which means there is an effect of ginger water steeping with nausea and vomiting of pregnant women TM I in the Gedung Negara Primary Health Care in 2023.

Table 5
Effect of ginger water Infusion on nausea and vomiting of pregnant women TM I in the Gedung Negara Primary Health Care in 2023

Variables	Ginger water Infusion	Mean	Median	Min-Max	P-Value
Nausea Vomiting	Before	8,9	9.0	6-12	0.0000
	After	5,1	5.0	4-6	

DISCUSSION

Average nausea and vomiting before being given ginger water infusion in the Gedung Negara Primary Halth Care in 2023.

Based on the study, it is known that the average nausea and vomiting before being given ginger water brew is 8.9 with a *standard deviation value of* 1.7, a minimum value of 6, and a maximum value of 12.

Nausea and vomiting during pregnancy is a digestive system disorder during pregnancy that usually occurs in the morning caused by an increase in pregnancy hormones such as the hormone *Human Chorionic Gonadotropin (*HCG)*, estrogen* and *progesterone* (Tiran, 2019).

In line with Farida's research (2020) the results showed that the average score of emesis gravidarum before being given ginger drink was 7.19. Wulandari's research (2019) found that the frequency of nausea and vomiting in the intervention group before the action had an average score of 13.08. Harahap's research (2020) The results showed that before being given a ginger wedang drink all respondents experienced severe nausea and vomiting as many as 30 people (100%).

The results of the study before the intervention obtained the highest PUQE score of 12 with a moderate category, and the lowest score was 6 with a mild score.

In the opinion of researcher, based on the results of the study, it was found that there was a difference in the average value of nausea and vomiting in mothers before and after consuming ginger broth so it was recommended for mothers to consume ginger broth if nausea and vomiting occurred but were still under supervision by health workers. providing information by health workers to pregnant women, especially in the first trimester to consume ginger broth given to reduce nausea and vomiting. By providing information, it is expected to increase the mother's knowledge so that she complies with the advice given.

Average nausea and vomiting after being given ginger water infusion in the Gedung Negara Primary Health Care in 2023.

Based on the study, it is known that the average nausea and vomiting after being given ginger water is 5.1 with a *standard deviation* value of 0.7, a minimum value of 4 and a maximum value of 6.

Pregnant women who experienced nausea and vomiting decreased after being given ginger drinks (Putri, 2017). The advantage of ginger is the content of essential oils that have a refreshing effect and block the gag reflex, while gingerol can launch blood and nerves work well. The fragrant aroma of ginger is produced by essential oils, while oleoresin causes a spicy flavor that warms the body (Khasanah, 2017). Ginger drink is effective in overcoming morning sickness (Rofiah, 2017).

Based on the description above, according to the researchers, after giving ginger water decoction, pregnant women felt a reduction in nausea and vomiting (nausea and vomiting) 5-6 times a day. This shows that giving ginger water decoction to pregnant women can reduce the frequency of nausea and vomiting during pregnancy. Ginger is very effective in the use of antiemetics to prevent emesis gravidarum in pregnancy. The majority of people in the Purus area work as housewives and fishermen with middle to lower socioeconomic status, so when facing complaints of emesis gravidarum in TM 1, they need alternatives to reduce the frequency of nausea and vomiting and discomfort during pregnancy. Pregnant women can continue their daily activities calmly and comfortably so that they can maintain the health of the mother and her fetus.

Bivariate Analysis
Effect of ginger water infusion with nausea and vomiting of pregnant women TM I in the Gedung Negara Primary Health Care in 2023

Based on the results of the *Wilcoxon* test, *p-value* = 0.000 (p-value < α = 0.05) which means that there is an effect of ginger water steeping with nausea and vomiting of pregnant women TM I in the Gedung Negara Primary Health Care in 2023.

In line with the theory that a decrease in emesis gravidarium can be done using ginger drinks, because ginger drinks *essential* oils *Zingiberena* (zingirona), zingiberol, can bilena, curcumin,

gingerol, flandrena, vit A and bitter resins that can block serotinin, a neurotransmitter that is synthesized in serotonergic neurons in the central nervous system and enterochromafin cells in the digestive tract, so as to provide a feeling of comfort in the stomach, so it is believed to provide a feeling of comfort in the stomach.

In line with the research of Rufaridah (2019) from the results of data analysis using *paired sample t-test* obtained *p-value* 0.000 (p < 0.05), it can be concluded that there is an effectiveness of ginger brew on reducing *emesis gravidarum* in the first trimester. Faridah's research (2020) obtained p value = 0.000 <0.05, meaning that there is an effect of ginger drink on emesis gravidarum in first trimester pregnant women. Ariska's research (2018) obtained a p value of 0.000 (<0.05), it can be concluded that there is a significant effect between the administration of ginger drink on reducing the frequency of emesis gravidarium in first and second trimester pregnant women at BPM Eni Marfuah Samarinda in 2018.

In the researchers' opinion, ginger tea is more effective in reducing nausea and vomiting in pregnant women. Based on the results of experiments conducted for 4 days, it can be seen that from the results of the study, mothers who consumed ginger brew experienced a reduction in nausea. This is because ginger brew which serves to accelerate the process of digestion of food in the stomach will help overcome the condition of nausea and vomiting that occurs in mothers, by giving this combination it will accelerate the decline in nausea and vomiting conditions in first trimester pregnant women.

In the opinion of the researcher, the results of the study found a significant effect on nausea and vomiting felt by mothers after consuming ginger broth, so it is expected that health workers provide information to pregnant women, especially in the first trimester, to consume ginger broth given to reduce nausea and vomiting. By providing information, it is expected to increase the mother's knowledge so that she complies with the advice given.

CONCLUSION

It is known that the average nausea and vomiting before being given ginger water is 8.9 with a *standard deviation value of* 1.7, a minimum value of 6, and a maximum value of 12. nausea and vomiting after being given ginger water is 5.1 with a *standard deviation value of* 0.7, a minimum value of 4 and a maximum value of 96. There is an effect of ginger water steeping with nausea vomiting of pregnant women TM I in the Gedung Negara Primary Health Care in 2023 (*p-value* = 0.000).

SUGGESTION

For Malahayati University, it can be used as a reference for academics on campus in improving the degree of public health, especially in research on nausea vomiting in pregnant women. This research can be used in community service programs as an innovation in non-pharmacological therapy for pregnant women who experience nausea and vomiting that can be used by pregnant women safely and can reduce nausea and vomiting. For Puskesmas Gedung Negara to open a class for pregnant women that contains activities such as pregnant gymnastics, counseling, demonstration of making ginger tea and others.

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THE EFFECT OF LAVENDER AROMATHERAPY ON REDUCING THE FREQUENCY OF EMESIS GRAVIDARUM IN FIRST TRIMESTER PREGNANT WOMEN

Kristiani Samosir[1], Astriana[2*], Febriyantina Parina[3], Susilawati[4]

Program Studi D-IV Kebidanan Fakultas Ilmu Kesehatan
email: astriana@malahayati.ac.id

ABSTRAK PENGARUH AROMATERAPI LAVENDER TERHADAP PENURUNAN FREKUENSI EMESIS GRAVIDARUM PADA IBU HAMIL TRIMESTER PERTAMA

Latar Belakang: Mual dan muntah (*emesis gravidarum*) merupakan salah satu tanda awal dan gejala kehamilan yang umum terjadi pada ibu hamil pada awal kehamilan trimester pertama. *Emesis gravidarum* pada ibu hamil dapat menimbulkan berbagai dampak, salah satunya adalah penurunan nafsu makan yang mengakibatkan janin akan kekurangan nutrisi dan cairan yang dibutuhkan oleh tubuh, hal tersebut dapat menyebabkaan berat badan lahir rendah dan terganggunya proses tumbuh kembang.

Tujuan: Tujuan penelitian untuk mengetahui pengaruh pemberian aromaterapi lavender dalam mengurangi frekuensi *emesis gravidarum* pada ibu hamil trimester pertama di Wilayah Kerja Puskemas Pakuan Aji Lampung Timur Tahun 2023.

Metode: Jenis penelitian kuantitatif dengan rancangan *pre-experimental* dengan desain *one group pretest-posttest*. Penelitian ini dilakukan di Wilayah Kerja Puskemas Pakuan Aji Lampung Timur, dengan 30 sampel menggunakan *accidental sampling*. Pengumpulan data menggunakan skor *PUQE-24* dan analisis data menggunakan *paired sample T-test.*

Hasil: Nilai rata-rata *emesis gravidarum* sebelum diberikan aromaterapi lavender 11,87 (SD 1,137) dan sesudah pemberian aromaterapi lavender 6,73 (SD 0,980). Sesudah pemberian aromaterapi lavender, responden mengalami penurunan mual muntah dari sedang menjadi ringan. Nilai beda rata-rata sebelum dan sesudah diberikan aromaterapi lavender 5,133 (SD 1,167).

Kesimpulan: Nilai *pvalue* 0,000<0,05 artinya ada pengaruh pemberian aromaterapi lavender dalam mengurangi frekuensi *emesis gravidarum* pada ibu hamil trimester pertama di Wilayah Kerja Puskemas Pakuan Aji Lampung Timur Tahun 2023.

Saran: Dengan hasil penelitian ini diharapkan dapat memberikan edukasi dan sosialisasi kepada ibu hamil dalam mengatasi *emesis gravidarum* dengan teknik pengobatan non-farmakologi yaitu dengan aromaterapi lavender

Kata kunci: *Emesis Gravidarum*, Aromaterapi Lavender, Kehamilan Trimester Pertama

ABSTRACT

Background: Nausea and vomiting (emesis gravidarum), is one of the early signs and symptoms of pregnancy that commonly occurs in pregnant women in the early first trimester of pregnancy. Emesis gravidarum in pregnant women can cause various effects, one of which is a decrease in appetite which results. The impact on the fetus is that the fetus will lack the nutrients and fluids needed by the body, this can cause low birth weight, disrupt the process of growth and development.

Purpose: The aim of the study was to determine the effect administration of lavender aromatherapy in reducing the frequency of emesis gravidarum in first trimester pregnant women in the Working Area of the Pakuan Aji Commuunity Health Center, East Lampung in 2023.

Methods: This type of quantitative research use pre-experimental with the one group pretest-posttest design. This research was conducted in the Working Area of the Pakuan Aji Public Health Center, East Lampung, with 30 respondents using accidental sampling. Data collection using the PUQE-24 score and data analysis using paired sample t-test.

Results: The mean score of emesis gravidarum before being given aromatherapy was 11.87 (SD 1.137) and after was 6.73 (SD 0.980). There was a difference from moderate to mild emesis gravidarum. The mean difference before and after administration of lavender aromatherapy was 5.133 (SD 1.167).

Conclusion: The p-value of 0.000<0.05 means that there was an effect administration of lavender aromatherapy in reducing the frequency of emesis gravidarum in first trimester of pregnant women in the Working Area of the Pakuan Aji Public Health Center, East Lampung in 2023.

Suggestions: By doing this research expected to be able to provide education and outreach to pregnant women in dealing with emesis gravidarum with non-pharmacological treatment techniques, namely lavender aromatherapy.

Keywords: Emesis Gravidarum, Lavender Aromatherapy, First Trimester of Pregnancy

INTRODUCTION

Nausea and vomiting, also known as emesis gravidarum, are one of the early signs of pregnancy for due to the long menstrual cycle, so some pregnant women only realise that they are pregnant after experiencing emesis gravidarum. Emesis gravidarum is one of the signs and symptoms of pregnancy that commonly occurs in pregnant women in the early first trimester of pregnancy. In some cases, it can continue into the second and third trimesters of pregnancy, but that rarely happens (Prawirohardjo, 2016).

Emesis gravidarum in pregnant women can cause various effects, one of which is a decrease in appetite, which results in changes in the electrolyte balance, namely potassium, calcium, and sodium, causing changes in the body's metabolism. The impact on the fetus is that the fetus will lack the nutrients and fluids needed by the body; this can cause low birth weight babies, disrupted growth and development processes, and others (Astuti, 2016).

According to the World Health Organization (WHO), in 2021, the number of cases of emesis gravidarum will reach 42.5% of the number of pregnancies in the world. In the United States and Canada, between 454,000 and 390,000 pregnant women experience nausea and vomiting each year (WHO, 2021).

In Indonesia, there are 50–90% cases of emesis gravidarum experienced by pregnant women. The main factor causing maternal death in Indonesia is indeed not nausea and vomiting (emesis gravidarum), but the incidence of nausea and vomiting is quite large, namely 60–80% in primigravidas and 40–60% in multigravidas. One hundred out of 1000 pregnancies experience more severe symptoms (Kemenkes RI, 2021).

Health Profile of Lampung Province In 2020, the high incidence of emesis gravidarum in pregnant women will be 50–90%, while hyperemesis gravidarum will reach 10–15% in Lampung Province. Of the number of pregnant women, there will be as many as 182,815 in first trimester. Based on the Health Profile of Lampung Province in 2021, the highest emesis gravidarum rate in pregnant women was 50–90%, while hypermesis gravidarum reaches 10-15% in Lampung Province. Of the number of

pregnant women, there are as many as 186,319 (Dinkes Provinsi Lampung, 2020-2021).

Management of emesis gravidarum during pregnancy can be done pharmacologically. Pharmacological therapy itself is carried out by administering antiemetic drugs, antihistamines, steroids, fluids, and electrolytes, as well as non-pharmacological therapies such as herbal products, acupressure, and acupuncture. A literature survey reported that the most widely used complementary herbal medicines that can reduce nausea and vomiting in pregnant women are ginger, peppermint, raspberries, lemon, and lavender. In providing management for emesis gravidarum, it is better and safer to use non-pharmacology because it minimises the impact that occurs on first trimester pregnant women (Rizky 2018)

Lavender aromatherapy works by affecting the work of the brain, the olfactory nerves, which are stimulated by the presence of certain aromas, are directly related to the hypothalamus. The hypothalamus acts as a relay and regulator, bringing messages to the brain and other parts of the body. The message received is then converted into action in the form of releasing electrochemical compounds that cause relaxation or sedation. Lavender aromatherapy is an aromatherapy that is easy to find and more effective in helping reduce emesis gravidarum because its soft and non-stinging aroma can be applied properly and increases comfort for pregnant women (Rosalinna, 2019).

Lavender has several main components, namely linalool, linalylacetat, 1,8-cineole B-ocimene, terpinene-4-ol, and camphor (Prabowo, 2019). So that it can cause a feeling of comfort in pregnant women who are experiencing nausea and vomiting. Lavender aromatherapy can increase comfort and calm the mind. It has a substance that is useful as a sedative and used as aromatherapy, which can affect the neuroendocrine system, which affects the release of hormones and neurotransmitters. These conditions will increase the comfort of pregnant women who are experiencing nausea and vomiting. Lavender aromatherapy is also easier to apply and obtain (Metasari, 2022).

During the survey at the Pakuan Aji Public Health Centre, East Lampung, the number of pregnancies was 198, with 68 mothers in the first

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trimester, 68 women in the second trimester, and 62 women in the third trimester. Of the number of pregnancies in the first trimester, the incidence of pregnancy complications, namely emesis gravidarum was 52 mothers (67.9%). When conducting interviews with 10 pregnant women at first trimester who experienced emesis gravidarum, 7 pregnant women (70%) treated emesis gravidarum by drinking warm water and warm tea, and 3 pregnant women (30%) overcame emesis gravidarum by taking medication. When interviewed, all pregnant women who experienced emesis gravidarum said they had never used non-pharmacological therapy or lavender aromatherapy to reduce emesis gravidarum. Based on this problem, the researcher was interested in conducting research with the title "The Effect of Giving Lavender Aromatherapy on Reducing the Frequency of Emesis Gravidarum in First Trimester Pregnant Women in the Work Area of the Pakuan Aji Public Health Centre, East Lampung, in 2023".

RESEARCH METHODS

This type of research is quantitative research used pre-experimental with a one-group pretest-posttest design. This research was conducted in the working area of the Pakuan Aji Public Health Centre, East Lampung, July 2023. The population in this study was 68 pregnant women entering the first trimester, with 30 pregnant women entering the first trimester with nausea and vomiting (emesis gravidarum) used accidental sampling. Data analysis using univariate and bivariate with paired sample t-test.

RESEARCH RESULTS
Normality Test

Table 1
Normality Test

Test score	Shapiro-wilk value
Emesis gravidarum (before)	0,070
Emesis gravidarum (after)	0,059

Based on the table above, it can be seen that the Shapiro Wilk value was >0.05. It can be concluded that the data for the two groups in this study were normally distributed.

Univariate Analysis

It can be seen that the mean of emesis gravidarum before administration of lavender aromatherapy to first-trimester pregnant women was 11.87 (SD 1.137; SE 0.208), minimum value was 10, and maximum value was 13.

Table 2
Frequency of Emesis Gravidarum Before Administration of Lavender Aromatherapy to First Trimester Pregnant Women in the Working Area of Pakuan Aji Public Health Centre

Variable	N	Mean	SD	SE	Min	Max
Emesis gravidarum	30	11,87	1,137	0,208	10	13

Table 3
Frequency of Emesis Gravidarum After Administration of Lavender Aromatherapy to First Trimester Pregnant Women in the Working Area of Pakuan Aji Public Health Centre

Variable	N	Mean	SD	SE	Min	Max
Emesis gravidarum	30	6,73	0,980	0,179	5	9

It can be seen that the mean of emesis gravidarum after administration of lavender aromatherapy to first-trimester pregnant women in the working area of the Pakuan Aji Public Health Centre in East Lampung in 2023 was 6.73 (SD 0.980; SE 0.179), minimum value was 5, and maximum value was 9.

Bivariate Analysis

The mean of nausea and vomiting before administration of lavender aromatherapy was 11.87 and after administration of lavender aromatherapy was 6.73; the mean difference before and after administration of lavender aromatherapy was 5.133 (SD 1.167; SE 0.213). P-value of 0.000 < 0.05, there is an effect of administration of lavender aromatherapy on reducing the frequency of emesis gravidarum in first trimester pregnant women in the working area of the Pakuan Aji Public Health Centre, East Lampung, in 2023.

Table 4
The Effect of Administration of Lavender Aromatherapy on Reducing the Frequency of Emesis
Gravidarum in First Trimester Pregnant Women in the Working Area of Pakuan Aji
Public Health Centre

Variable	Mean	Mean Difference	SD	SE	CI 95%	p-value
Before	11,87	5,133	1,167	0,213	4,698-5,569	0,000
After	6,73					

DISCUSSIONS

The result shown that the mean of emesis gravidarum before administration of lavender aromatherapy to first-trimester pregnant women was 11.87 (SD 1.137; SE 0.208), minimum value was 10, and maximum value was 13. Emesis gravidarum is defined as a tendency to vomit something or a sensation that appears in the oesophagus or epigastric area without being followed by vomiting, while vomiting is defined as the expulsion of stomach contents through the mouth and is generally accompanied by a strong urge that occurs during pregnancy (Pratiwi, 2022).

Emesis gravidarum can be reduced by administration of lavender aromatherapy. The mechanism for reducing anxiety and stress by inhaling lavender aromatherapy is through the smell of the active volatile compounds and linalool contained in lavender aromatherapy, which stimulates the parts of the brain whose stimulate the formation of effects caused by aromatherapy. When aromatherapy is inhaled, the volatile molecules of the oil are carried by the air to the 'roof' of the nose, where delicate cilia emerge from the receptor cells. When the molecules attach to the hairs, an electrochemical message will be transmitted through the ball and olfactory system into the limbic system. This will stimulate memory and emotional responses (Zuraida and Sari, 2018).

Research conducted by Pratiwi (2018) at Eria Bunda Pekanbaru Mother and Child Hospital, study showed that there was a significant decrease in the reduction of nausea and vomiting in the intervention group after administration of aromatherapy (p-value <0.05). The results of this study recommend that aromatherapy be used as a nursing intervention to reduce nausea and vomiting in patients treated with emesis gravidarum (Jaelani, 2017).

According to the assumptions of researchers, the problem of nausea and vomiting in pregnancy is something that often occurs, even 85% of pregnant women must experience nausea and vomiting problems. Therefore, nausea and vomiting in pregnancy must be handled properly and correctly to reduce the incidence of malnutrition in pregnancy and increase the growth and development of the fetus. For this reason, the researchers intended to provide lavender aromatherapy to reduce the problem of nausea and vomiting in pregnancy. Lavender aromatherapy works by affecting the work of the brain's olfactory nerves, which are stimulated by the presence of certain aromas and are directly related to the hypothalamus..

The results of the research that has been carried out are reinforcing factors or aggravating the occurrence of emesis gravidarum in working mothers due to the condition of pregnancy in working women. It is not recommended if the physical workload is quite heavy, as well as if the effects of stress due to workload are also not recommended. Pregnancy is a physiological event, with hormones playing a role in the development of the baby and the mother. The hormones that play a role are oestrogen and progesterone. The release of this hormone is regulated by the hypothalamus in the human brain. If the burden on the mother's mind during pregnancy is heavy enough, it will affect the balance of these hormone expenditures. Whereas at the age of the mother, emesis gravidarum occurs at the age of under 20 years and above 35 years due to psychological factors. The results of this study indicate that none of the respondents are under 20 years old, but in this case, the respondent who is experiencing her first pregnancy will experience nausea and vomiting, so in this case, the mother lacks experience in dealing with this problem.

Whereas in parity mothers, emesis can cause concern for primigravidas and multigravidas. Concerns experienced by primigravidas indicate a lack of knowledge, information, and communication between women and carers, whereas multigravidas already have experience, information, and knowledge about the symptoms of emesis gravidarum, so they are able to overcome the symptoms.

The mean score of emesis gravidarum after administration of lavender aromatherapy to first trimester pregnant women in the working area of the Pakuan Aji Public Health Centre, East Lampung, in 2023 was 6.73 (SD 0.980; SE 0.179), minimum value was 5, and maximum value was 9. Research conducted by Zuraida and Sari found that lavender

aromatherapy was effective in reducing nausea and vomiting in first trimester pregnant women. Lavender aromatherapy can provide a comfortable effect, increase body relaxation, and reduce anxiety levels. Before the intervention, it was known that the intensity of nausea and vomiting was 4-5 times a day. After 7 days of administration of aromatherapy, the intensity of nausea and vomiting was only limited to morning sickness.

Sugita's research (2018), found that there was a significant difference between before and after administration of ginger aromatherapy (p-value 0.000). Lavender aromatherapy was more effective against nausea and vomiting (8.50) compared to the ginger aromatherapy group (6.50), so it can be concluded that lavender aromatherapy was more effective than ginger aromatherapy.

According to the assumptions of researchers, lavender aromatherapy works by affecting the work of the brain, the olfactory nerves, which are stimulated by the presence of certain aromas, are directly related to the hypothalamus. The hypothalamus is the part of the brain that controls the glandular system, regulates hormones, and influences growth and other bodily activities such as heart rate, respiratory function, digestion, body temperature, and hunger. In addition, when scented oils are inhaled, nerve cells are stimulated, which affects the performance of the limbic system. The limbic system is related to areas of the brain related to memory function, blood circulation, and the glandular system.

The results shown that a decrease in nausea and vomiting after administration of lavender aromatherapy. Respondents said that after this therapy, it increases the feeling of relaxation in the body, reduces nausea and vomiting, and increases appetite, so that the need for nutrients in the body in pregnant women increases and reduces the risk of malnutrition in early pregnancy. According to researchers, lavender aromatherapy can provide a comfortable effect and reduce levels of anxiety and stress, and this condition can reduce the intensity of emesis gravidarum in first trimester pregnant women, where psychological problems are a condition that exacerbates nausea and vomiting in pregnant women.

The results of research conducted after administration of lavender aromatherapy to overcome the problem of emesis gravidarum in pregnant women can be influenced by several characteristics of the respondents, such as education, occupation, and age of the mother, where these characteristics have a relationship with a decrease of emesis gravidarum. In mothers under 30 years of age, the problem of nausea and vomiting still

often occurs because mothers have just had children and the hCG hormone is still high, while in mothers' education, education can affect the reduction of emesis gravidarum because mothers only do this technique during the research and outside of mother's research did not do so that emesis gravidarum is still on a high scale, whereas in working mothers, the problem of nausea and vomiting still occurs frequently because mothers often leave the house and consume food that is not good for pregnant women.

According to the assumptions of researchers, a healthy work environment and a light physical and psychological workload will reduce the incidence of excessive or abnormal emesis. A healthy work environment can be created with the cooperation of all employees or people in the environment and supported by clear policies and regulations from the managerial institution or office. In addition, the workload, both physically and psychologically, is also a common concern. Currently, there are government regulations governing women's work in situations of pregnancy, childbirth, and breastfeeding. If this is applied properly in the work environment, it is very beneficial for pregnant women.

The mean of nausea and vomiting before administration of lavender aromatherapy was 11.87 and after administration of lavender aromatherapy was 6.73; the mean difference before and after administration of lavender aromatherapy was 5.133 (SD 1.167; SE 0.213). P-value of 0.000<0.05, there is an effect of administration of lavender aromatherapy on reducing the frequency of emesis gravidarum in first trimester pregnant women in the working area of the Pakuan Aji Public Health Centre, East Lampung, in 2023.

Management of emesis gravidarum during pregnancy can be done pharmacologically. Pharmacological therapy itself is carried out by administering antiemetic drugs, antihistamines, steroids, fluids, and electrolytes, as well as non-pharmacological therapies such as herbal products, acupressure, and acupuncture. A literature survey reported that the most widely used complementary herbal medicines that can reduce nausea and vomiting in pregnant women are ginger, peppermint, raspberries, lemon, and lavender. In providing management for emesis gravidarum, it is better and safer to use non-pharmacology because it minimises the impact that occurs on first trimester pregnant women (Rizky, 2018).

Research by Astriana et al. (2015) conducted on pregnant women at South Lampung in 2015 showed that lemon aromatherapy decrease a nausea, so that for pregnant women who experience

nausea, they can apply herbal treatment with aromatherapy.

A similar study was conducted by Rosalinna (2019) regarding the effect of adminitration of lavender aromatherapy to reduce nausea and vomiting in first trimester pregnant women in the Jambu Kulon Public Health Centre, showed that there was an effect of lavender aromatherapy on reducing nausea and vomiting in first trimester pregnant women (p-value 0.000).

Research by Hernawati (2022) showed that there was a significant decrease in nausea and vomiting in the intervention group after administration of lavender aromatherapy. Lavender aromatherapy can be used to reduce nausea and vomiting in pregnant women as an effective non-pharmacological therapy.

This study showed that there is a difference in reducing nausea and vomiting in pregnant women after administration of lavender aromatherapy. Lavender aromatherapy can increase comfort and calm the mind, has substances that are useful as sedatives, which can affect the neuroendocrine system, which influences the release of hormones and neurotransmitters. The difference in reducing nausea and vomiting can also be influenced by the habit of the mother in consuming foods that can cause or increase acid in the stomach, which can trigger excessive nausea and vomiting.

According to the researchers' assumption, administration of lavender aromatherapy to pregnant women with nausea and vomiting can help reduce the frequency of emesis gravidarum in pregnancy. According to Jaelani (2017), the main component in lavender can increase the feeling of comfort and suppress the hCG hormone, so that it can reduce nausea and vomiting. Linaool is a component of lavender that has a sedative effect and is commonly used as a therapeutic aroma that affects the body's neuroendocrine system, which affects the release of hormones and neurotransmitters. This situation will increase the feeling of comfort for pregnant women who experience nausea and vomiting.

This study showed that there was a relationship between the characteristics and the administration of lavender aromatherapy where the mother's education influences this technique, that is, the mother's education says she still does not understand and has never done this technique to reduce emesis gravidarum. This is reinforced by the lack of information for mothers about treatment to overcome the problem of emesis gravidarum.

According to the researchers' assumptions, age, education, occupation, gestational age, and parity affect the severity of nausea and vomiting in pregnancy, and mothers with low education do not understand how to deal with nausea and vomiting during pregnancy. They often assume that nausea and vomiting are normal for pregnant women to experience in their first trimester, so many pregnant women still lack information about this problem. Excessive nausea and vomiting in pregnancy can cause nutritional deficiencies in pregnant women, where the food and nutrients that enter have not been absorbed by the body but have been excreted again by the body.

Emesis gravidarum occurs at ages under 20 and above 35 due to psychological factors. Psychological problems may predict that some women will experience nausea and vomiting in pregnancy. Pregnancy that is not planned, uncomfortable, unwanted, financial burden, will cause emotional pain, ambivalence, and conflict. So it can be concluded that pregnancy at the age of 20–35 is the best age to prevent abnormal emesis gravidarum. However, if pregnancy occurs between the ages of 20 and 35, it is expected that pregnant women have sufficient knowledge so they can understand how to deal with emesis and a stable psychological condition with family support and assistance from health workers so that the psychological changes of the mother are not extreme and hormone expenditure can be balanced, which ultimately does not trigger excessive emesis.

This study showed that there was a relationship work and emesis gravidarum because a trip to work that may be rushed in the morning without sufficient time for breakfast can cause nausea and vomiting. Depending on the nature of a woman's work, smells, chemicals, or the environment can add to a woman's nausea and cause vomit. Smoking has been shown to worsen symptoms of nausea and vomiting, but it is unclear whether this is due to olfactory effects or nutritional effects, or whether assumptions can be made about an association between habitual practice and psychoemotional distress.

Most primigravidas have not been able to adapt to the hormones estrogen and gonadotropin choreonics, so emesis gravidarum is more common. Whereas in multigravidas able to adapt to the hormones estrogen and choreonic gonadotropin because they already have experience with pregnancy and childbirth. Primigravidas show a lack of knowledge, information, and poor communication between women and their carers, which also affects women's perceptions of the symptoms of nausea and vomiting. Whereas in multigravida already have experience, information, and knowledge about the symptoms of emesis gravidarum, so they are able to overcome the symptoms.

The gestational age factor can affect the occurrence of emesis gravidarum, but at gestational age, it does not affect how badly the mother experiences emesis gravidarum problems. The increase in emesis gravidarum in pregnant women is due to an increase in the hCG hormone and an increase in hormones in the body.

This study showed that there is a difference in the decrease in emesis gravidarum among pregnant women. Because the respondents who experience a decrease in the scale are more likely to have several contributing factors, namely mothers who are able to control the problem of emesis gravidarum by consuming foods that do not aggravate emesis gravidarum or food stinging. Another factor that causes differences in decline was the level of knowledge about dealing with the problem of emesis gravidarum.

CONCLUSION

The results of this study based on the characteristics of the age of the most pregnant women, namely the age of 22–30 years, were 20 respondents (66.6%), junior high school, as many as 13 respondents (43.3%), housewives as many as 15 respondents (50.0%), gestational age 10 weeks as many as 5 respondents (16.7%), primigravida as many as 24 respondents (80.0%). The mean score of emesis gravidarum before administration of lavender aromatherapy to first trimester pregnant women was 11.87 (SD 1.137). The mean score of emesis gravidarum after administration of lavender aromatherapy to first trimester pregnant women was 6.73 (SD 0.980). There was an effect of administration of lavender aromatherapy on reducing the frequency of emesis gravidarum in first trimester pregnant women in the working area of the Pakuan Aji Public Health Centre, East Lampung, in 2023.

SUGGESTION

It is suggested that future researchers can complete further research by thoroughly observing the confounding factors that affect the frequency of emesis gravidarum in the first trimester of pregnancy.

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THE EFFECT OF MOZART CLASSIC MUSIC THERAPY ON POSTPARTUM BLUES SYMPTOMS

Dianis Oktaria[1], Fijri Rachmawati[2]*, Achmad Farich[3]Neneng Siti Lathifah[4]

[1,2,3,4]Health Sciences Faculty, Midwifery Study Program, Malahayati University
*Email correspondence fijri@malahayati.ac.id

ABSTRAK PENGARUH TERAPI MUSIK KLASIK MOZART TERHADAP GEJALA POSTPARTUM BLUES

Latar Belakang Postpartum Blues adalah periode depresi sementara yang terjadi selama beberapa hari pertama masa nifas. Kondisi ini dapat menyebabkan depresi pada ibu dan mengganggu tumbuh kembang bayi yang telah dilahirkan. Angka kejadian postpartum blues di Puskesmas Totomulyo Tulang Bawang Barat sebanyak 45 kasus. Terapi musik klasik Mozart dipercaya dapat membantu mengurangi gejala postpartum blues.
Tujuan untuk mengetahui Pengaruh Terapi Musik Klasik Mozart terhadap Postpartum Blues di Wilayah Kerja Puskesmas Toto Mulyo Kabupaten Tulang Bawang Barat
Metode kuantitatif, menggunakan pendekatan pre-eksperimental dengan desain one group pretest-posttest, dilaksanakan pada bulan Mei sampai Juli di Wilayah Kerja Puskesmas Toto Mulyo. Penelitian ini menggunakan data primer dan sekunder dengan jumlah sampel sebanyak 45 ibu yang mengalami gangguan persalinan postpartum blues. Instrumen penelitian menggunakan EPDS (The Edinburgh Postnatal Depression Scale) dan lembar observasi. Analisis data menggunakan analisis univariat dan bivariat dengan menggunakan uji Paired Simple T-Test.
Hasil Nilai rata-rata yang diperoleh postpartum blues sebelum intervensi adalah 11,15 dengan standar deviasi 1,223 sedangkan nilai rata-rata postpartum blues setelah intervensi sebesar 6,31 dengan standar deviasi 1,164. Analisis bivariat didapatkan rata-rata perbedaan nilai postpartum blues sebelum dan sesudah intervensi sebesar 4,84 dengan Paired Simple T-Test mendapatkan p = 0,000
Kesimpulan terdapat pengaruh terapi musik klasik Mozart terhadap pencegahan postpartum blues. Terapi musik klasik Mozart telah terbukti mengurangi gejala postpartum blues.
Saran Terapi musik klasik mozart dapat diberikan pada ibu nifas yang mengalami postpartum blues.

Kata Kunci: musik klasik mozart, Postpartum blues, Motherpostpartum

ABSTRACT

Backgraound Postpartum Blues are temporary periods of depression that occur during the first few days of the puerperium. This condition can cause depression in the mother and interfere with the growth and development of the baby who has been born. Incidence rate *postpartum* blues at the Totomulyo Tulang Bawang Barat Health Center as many as 45 cases. Mozart classical music therapy is believed to help reduce symptoms*postpartum* blues.

Purpose Knowing the effect of Mozart's classical music therapy on *postpartum* blues in the Working Area of the Toto Mulyo Public Health Center, West Tulang Bawang Regency

Methods quantitative, using a pre-experimental approach with a one group pretest-posttest design, carried out from May to July in the Working Area of the Toto Mulyo Health Center. This study used primary and secondary data with a total sample of 45 mothers giving birth disturbance *postpartum* blues. The research instrument used EPDS (*The Edinburgh Postnatal Depression Scale*) and observation sheets. Data analysis by means of univariate and bivariate analysis using the Paired Simple T-Test.

Result The average value is obtained *postpartum* blues before the intervention was 11.15 with a standard deviation of 1.223 while the average value *postpartum* blues after intervention of 6.31 with a standard deviation of 1.164. Bivariate analysis found that the average difference value *postpartum* blues before and after the intervention was 4.84 with the Paired Simple T-Test getting p = 0.000,.

Conclusion which means there is an effect of Mozart's classical music therapy on prevention *postpartum* blues. Mozart classical music therapy has been shown to reduce symptoms *postpartum* blues.

Suggestion Mozart classical music therapy can be given to the mother *postpartum* who experience postpartum blues.

Dianis Oktaria, Fijri Rachmawati, Achmad Farich,Neneng Siti Lathifah

INTRODUCTION

Postpartum is a crisis period for mothers, partners and families, this period requires a good adjustment process due to changes in the physical, psychological and family structure (Silbert-Flagg & Pillitteri, 2018). Exact cause of *postpartum* blues is still unknown, but suspected there are two factors namely; (1) Internal factors, more towards psychological and personality factors, for example: feeling afraid, anxious, full of tension and worry, hormonal fluctuations, there is a history of previous depression, a history of pregnancy and childbirth with complications, difficulty breastfeeding, cesarean section delivery, and lack of mother's knowledge will baby care; (2) External factors, the occurrence of postpartum blues is more towards social support, condition and quality of the baby, husband's mental status, (Mansur & Budiarti, 2014), and coping stress ((Ningrum 2017).

From several research results, it was found that cases of mothers who got Baby blues and Postnatal Depression were quite high, namely: One in two mothers who gave birth (50%) had experienced Baby blues, and around 10% would continue to become Postnatal Depression. About 70% of all mothers who give birth have experienced Baby blues, and about 10% -20% of mothers who have just given birth have *Postpartum* Depression. About 10% -22% of mothers who give birth for the first time suffer *Postpartum* Psychosis, one in two mothers who give birth within the first few minutes or hours after giving birth, feel happy, then suddenly for no apparent reason. (Susanti and Sulistiyanti, 2017).

How to prevent depression *postpartum* or psychosis *postpartum* If this doesn't happen, it needs good handling when the postpartum mother experiences *postpartum* blues. One of the treatments that can be done on the mother *postpartum* blues is to provide relaxation therapy, namely music therapy. Music therapy acts as a relaxation technique to improve, maintain, develop mental, physical, and emotional/psychological health (Djohan, 2006). Currently there are many types of music that can be heard, but music that places its class as music with medical significance is classical music because this music has an extraordinary magnitude in the development of health sciences, including having a soft and regular tone, providing alpha wave stimulation, calming, and helping the listener. more relaxed (Campbell, 2001). The choice of classical music therapy is based on the belief of many music experts, that the rhythm and tempo of classical music follows the human heart rate, which is around 60 beats per minute (Potter & Perry, 2005). From several studies on the influence of various types of classical music, in the end many of these researchers advocate classical Mozart music because the medical application of Mozart's music has proven amazing results for the development of health sciences (Campbell, 2001).

Based on a preliminary study conducted by researchers in the working area of the Totomulyo Tulang Bawang Barat Health Center using the interview method, one of the puskesmas midwives said that many postpartum mothers experienced *postpartum* blues and previously none of the female students had researched therapy for *postpartum* blues. After obtaining some data on postpartum women from the puskesmas, the researchers then visited one address at a time and conducted interviews. The results of the interviews showed that 4 out of 5 postpartum mothers experienced symptoms *postpartum* blues such as irritability, anger for no reason at husband, irritability, and crying. These symptoms were increasingly felt when the first child was born and no therapy has been done to treat these symptoms. Based on the description above, the researcher is interested in conducting research on "Effectiveness of Mozart's Classical Music Therapy in Reducing Symptoms *Postpartum* Blues".

RESEARCH METHODS

This type of research is quantitative, using a pre-experimental approach with a one-group pretest-posttest design, carried out from May to July in the Working Area of the Toto Mulyo Health Center.The population consists of all postpartum mothers who experience *postpartum* blues at the totomulyo health center, researchers took a sample of at least 45 people using purposive sampling. This study used primary and secondary data with a total sample of 45 mothers with distractions *postpartum* blues. The research instrument used EPDS (*The Edinburgh Postnatal Depression Scale*) and observation sheets. Data analysis by means of univariate and bivariate analysis using the Paired Simple T-Test

RESEARCH RESULTS
Univariate analysis

Scale of *postpartum* blues before treatment obtained an average value of 11.15, a standard deviation of 1.223 with a lowest scale of *postpartum* blues is 10 and the highest scale of *postpartum* blues is14. *Postpartum* blues after treatment obtained an average value of 6.31, a standard deviation of 1.164 with the lowest scale of *postpartum* is 4 and highest scale of *postpartum* blues is 9.

Table 1
Assessment *Postpartum* Blues at the Totomulyo Health Center

Postpartum blues	Mean	Standard Deviation
Pre-test	11,15	1,223
Post-Test	6,31	1,164

Bivariate Analysis

Table 2
Assessment *Postpartum* Blues at the Totomulyo Health Center

Postpartum blues	Mean	Standard Deviation	Mean Difference	p-value
Pre-Test	11,15	1,223	4,84	0,000
Post-Test	6,31	1,164		

The p-value was obtained at 0.000, which means that there is an effect of Mozart's classical music therapy on *postpartum* blues at the Totomulyo Health Center in North Lampung in 2023. Average scale of *postpartum* blues after treatment is lower than before treatment, the postpartum period Scale of postpartum blues in mothers decreased after being given Mozart's classical music therapy by 4.84.

DISCUSSION

Postpartum blues before treatment obtained an average value of 11.15 and a standard deviation of 1.223, with the lowest value scale being 10 and the highest value scale being 14. The results of the study found that *postpartum* blues before giving Mozart classical music therapy is a scale of 10 as many as 18 people (40.0%), a scale of 11 as many as 11 people (24.4%), a scale of 12 as many as 10 people (22.2%), a scale of 13 as many as 3 people (6.7%), and a scale of 14 as many as 3 people (6.7%). These results indicate that most of the respondents experienced *postpartum* moderate level of blues before being given Mozart classical music therapy with a scale of 10 to 40.0%.

Postpartum Blues is a mild affective syndrome that often appears in the first week after delivery and is characterized by symptoms such as reactions of depression/sadness/dysphoria, crying, irritability. Among the several causes of this change are due to hormonal fluctuations, one of which is in the endocrine system, namely a sudden decrease in the hormones estrogen and progesterone and this will affect the psychological condition of the mother, symptoms that can be seen are that the mother becomes easy to cry, irritable and irritable (Kirana, 2015)

Incident *postpartum* Blues is strongly influenced by many factors, namely internal factors and external factors. Internal factors can be caused, among other factors, hormonal fluctuations. The hormone estrogen increases during pregnancy, and decreases during childbirth, causing depression, endorphins, which can trigger feelings of joy and happiness, decrease during childbirth. This also contributes to the incidence of depression, thyroid hormone, experiencing instability after giving birth makes the mother less enthusiastic. Other internal factors are diseases that accompany the mother during pregnancy and childbirth. External factors are cultural practices that limit mother's activities and the lack of support that mothers receive during pregnancy, childbirth and *postpartum* (Rahayu, 2020)

Music therapy is often used because it is very easy to do and affordable, but its effect shows how big music can affect a person's tension or relaxation. The music will stimulate the release of brain waves known as α waves which have a frequency of 8-12 cps (cycles per second). When the α waves are released, the brain produces serotonin which helps maintain feelings of happiness and helps maintain mood, by helping sleep, feeling calm and releasing depression and endorphins which cause a person to feel comfortable, calm, and euphoric (Permatasari,*et al*, 2015)

For assessment results *postpartum* blues after treatment obtained an average value of 6.31 and a standard deviation of 1.164, with a lowest scale *of postpartum* blues is 4 and highest scale of *postpartum* blues is 9. Research results The results of the study found that the scale of *postpartum* blues after giving classic music therapy Mozart results obtained on a scale of 4 as many as 3 people (6.7%), scale 5 as many as 6 people (13.3%), scale 6 as many as 18 people (40.0%), scale 7 as many as 12 people (26.7%), and scale 8 as many as 4 people (8.9%)). scale 9 as many as 2 people (4.4%). These results indicate that the majority of respondents are not experiencing interference *postpartum* blues after

being given Mozart classical music therapy, with a scale of 6 to 40.4%.

Mozart's classical music therapy has the advantage of the purity and simplicity of the sounds it creates. The rhythms, melodies, and high frequencies in Mozart's classical music stimulate and energize the creative and motivational areas of the brain and match the pattern of human brain cells. (Permatasari, et al, 2015)

In this study, in general, there was a difference in the mean pain scale before and after giving lemon aromatherapy of 3.33 with a p=0.000 (Paired simple T-test), this is in line with the results obtained according to Santi & Wahid (2019), that therapy Mozart's classical music is effective for lowering the scale of *postpartum* blues. Permatasari (2015) found that Mozart's classical music therapy was effective in reducing symptoms of *postpartum* blues. Based on the results of this study, Mozart's classical music therapy is expected to be part of the mother's treatment of *postpartum* blues. Rahayu's research (2020) also shows that classical music by Mozart is effective for reducing symptoms of *postpartum* blues.

In this study, the average value was obtained *postpartum* blues before being given Mozart's classical music therapy was 11.15, while the average *postpartum* blues after being given Mozart classical music therapy is 6.31 The results show a very significant decrease of 4.84. This proves that Mozart's classical music therapy has proven to have an effect on reducing *postpartum* blues at the Totomulyo Health Center.

According to researchers, there has been a decline *postpartum* blues. When given Mozart classical music therapy to postpartum mothers experiencing baby blues, the music will stimulate the production of brain waves known as waves A which have a frequency of 8 to 12 cps (cycles per second). When wave A is released, the brain produces serotonin which helps maintain feelings of happiness and helps maintain mood, by helping clients start sleeping, feeling calm and releasing depression and endorphins that cause a person to feel good, calm.

CONCLUSION

Before the treatment, the postpartum blues scale had an average score of 11.15, with a standard deviation of 1.223. The lowest score on the postpartum blues scale was 10, and the highest was 14. After the treatment, the postpartum blues had an average score of 4.84 and a standard deviation of 1.164. The lowest postpartum blues scale was 4, and the highest was 9. The average postpartum blues scale after the treatment was lower than before the

treatment, indicating that the postpartum blues scale for mothers decreased by 4.84 after receiving Mozart's classical music therapy.

SUGGESTION

It is hoped that postpartum mothers can recognize various kinds of non-pharmacological therapies to overcome their *postpartum* blues, one of which is classical music therapy Mozart. Postpartum mothers can use Mozart classic music therapy as a substitute for pharmacological therapy to reduce *postpartum* blues because it's easy, cheap, and without side effects. This classic Mozart therapy music application can be listened to when the mother is relaxed. For puskesmas, this research can be used as material for making policies related to therapy management *postpartum* blues listening to mozart classical music to minimize the side effects of chemical drugs. Mozart classical music therapy can be given to postpartum mothers. Puskesmas can socialize health workers in therapeutic services listening to Mozart classical music to reduce *postpartum* blues. The use of Mozart classical music therapy in puskesmas can be given as a complement to treatment.

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THE EFFECT OF PAPAYA LEAF FEEDING ON BREASTFEEDING ADEQUACY IN POSTPARTUM WOMEN

Sri Dinengsih[1*], Mediya Hesti Pratiwi[2]

[1,2] Midwifery Study Program, Faculty of Health Sciences, Nasional University
*Email correspondence: sridinengsih@civitas.unas.ac.id

ABSTRAK : PENGARUH PEMBERIAN DAUN PEPAYA TERHADAP KECUKUPAN ASI PADA IBU NIFAS

Latar Belakang: ASI merupakan sumber makanan yang mengandung nutrisi lengkap untuk bayi, meningkatkan daya tahan tubuh, meningkatkan kecerdasan akan terjalin rasa kasih sayang antara ibu dan anak. Data ibu nifas pada bulan mei 2022 yaitu angka kejadian kecukupan 50 kasus. Dari kecukupan 38 yaitu sekitar 76 % ibu mengatakan asi tidak lancar serta air susu tidak keluar setelah melahirkan dan air susu baru keluar dua hari setelah melahirkan tetapi jumlahnya sedikit dan jumlah air susu ibu yang sedikit, sehingga ibu memberikan susu formula di RSIA Aisyah Qurratu' ain .

Tujuan: Untuk mengetahui pengaruh daun pepaya dengan kecukupan ASI pada ibu nifas di RSIA Aisyah Qurratu' ain Bekasi Timur tahun 2022

Metodologi: Desain yang digunakan dalam penelitian ini adalah Quasi Eksperimental dengan pendekatan one group pretest – posttest design. Sampel dalam penelitian ini berjumlah 30 responden yang terdiri dari 15 responden intervensi dan 15 responden kontrol dengan teknik *purposive sampling*. Data dianalisis menggunakan uji *t-independent*. Instrumen yang digunakan adalah lembar observasi.

Hasil Penelitian: Analisis univariat pada kelompok intervensi diperoleh nilai rata-rata pretest sebesar 41.13 dan posttest sebesar 92.22, sedangkan pada kelompok control diperoleh nilai rata-rata pretest sebesar 44.45 dan posttest sebesar 66.67. Hasil uji *T-Test Independent* dengan nilai signifikansi *P-Value* 0.003 yang berarti ada pengaruh daun pepaya terhadap kecukupan ASI pada ibu menyusui

Simpulan : Ada pengaruh daun pepaya terhadap kecukupan ASI pada ibu menyusui ibu nifas di RSIA Aisyah Qurratu' ain Bekasi Timur tahun 2022

Saran: Diharapkan Ibu menyusui dapat memperhatikan apa yang dikonsumsi demi menunjang kelancaran asinya sehingga bayi terpenuhi kebutuhannya dengan ibu yang memiliki kecukupan ASI.

Kata kunci : Daun Pepaya, Ibu Menyusui, Kecukupan ASI,

ABSTRACT

Background: Breast milk is a food source that contains complete nutrition for babies, increases endurance, increases intelligence and will establish affection between mother and child. Data on postpartum mothers in May 2022 is the incidence of sufficiency of 50 cases. Of the adequacy of 38, about 76% of mothers said breast milk was not smooth and milk did not come out after giving birth and new milk came out two days after giving birth but the amount was small and the amount of breast milk was small, so the mother gave formula milk at Aisyah Qurratu 'ain Hospital.

Purpose: To determine the effect of papaya leaves on breast milk adequacy in postpartum women at RSIA Aisyah Qurratu' ain East Bekasi in 2022.

Method: The design used in this study was Quasi Experimental with a one group pretest - posttest design approach. The sample in this study amounted to 30 respondents consisting of 15 intervention respondents and 15 control respondents with purposive sampling technique. Data were analysed using the t-independent test. The instrument used was an observation sheet.

Results: Univariate analysis in the intervention group obtained an average pretest value of 41.13 and posttest of 92.22, while in the control group obtained an average pretest value of 44.45 and posttest of 66.67. The results of the Independent T-Test test with a significance value of P-Value 0.003 which means that there is an effect of papaya leaves on the adequacy of breast milk in breastfeeding mothers.

Conclusion: There is an effect of papaya leaves on the adequacy of breast milk in postpartum breastfeeding mothers at RSIA Aisyah Qurratu' ain East Bekasi in 2022

Suggestion: It is hoped that breastfeeding mothers can pay attention to what they consume to support the smooth running of their milk so that their babies meet their needs with mothers who have adequate breast milk

INTRODUCTION

The results of the 2017 Indonesian Demographic and Health Survey (IDHS) showed a neonatal mortality rate (NMR) of 15/1,000 live births, an infant mortality rate (IMR) of 24/1,000, and an under-five mortality rate (IMR) of 32/1,000. The IMR has reached the 2030 Sustainable Development Goals (SDGs) target of 25 per 1,000. The IMR is also expected to reach the target of 12 per 1,000.(Bappenas, 2017).

An indicator that describes health efforts made to reduce the risk of death in the neonatal period, namely 6-48 hours after birth, is the coverage of the First Neonatal Visit (KN1). Services in this visit (Integrated Management of Young Toddlers/MTBM) include neonate care counselling, exclusive breastfeeding, vitamin K1 injection and Hepatitis B0 injection (if not already given)(Kementerian Kesehatan RI, 2018)

Nationally, the coverage of infants who received exclusive breastfeeding in 2018 was 68.74%. In West Java Province, the percentage of exclusive breastfeeding coverage (90.79%), while the percentage of malnutrition in toddlers aged 0-23 months in Indonesia was 3.8%, while the percentage of undernutrition was 11.4%. In West Java Province, the percentage of malnutrition was 2.5% and undernutrition was 8.1%. In 2018, the national percentage of newborns who received IMD was 71.17%. In West Java Province, the percentage of newborns who received IMD was 72.30%. (Kementerian Kesehatan RI, 2018)

In Bekasi City in 2020 47.03% of infants were exclusively breastfed (12,592 infants out of 26,775 infants less than 6 months) and 91.87% of newborns with IMD (42,331 infants out of 46,077 infants). The number of stunted toddlers was 10.55% (14,194 stunted toddlers out of 134,537 toddlers whose height was measured). The prevalence of undernutrition was 6.12% (out of 134,537 toddlers who were weighed).(Dinas Kesehatan Kota Bekasi, 2020)

One of the three lowest PHBS indicators in Bekasi City is the lack of exclusive breastfeeding. Various activities have been carried out, including health promotion on exclusive breastfeeding for pregnant women since the beginning of pregnancy, Early Breastfeeding Initiation (IMD) socialisation for all puskesmas nutrition officers and maternity home managers, IMD and exclusive breastfeeding training for nutrition, MCH and health promotion officers. (Dinas Kesehatan Kota Bekasi, 2020)

To prevent and overcome nutritional problems, babies are only given breast milk from birth to six months of age. Breast milk contains colostrum which is rich in antibodies because it contains proteins for the immune system and fights germs, so exclusive breastfeeding can reduce the risk of infant mortality.(Kementerian Kesehatan RI, 2018)

The health of postpartum mothers must also be considered at least four times, including breast care and exclusive breastfeeding recommendations. Breast care is done for the success of breastfeeding influenced by two hormones (prolactin hormone and oxytocin hormone). Prolactin hormone plays a role in the release of breast milk. related to maternal nutrition, the more nutrients consumed by the mother, the more breast milk will be released. oxytocin hormone is influenced by mood, a sense of security and comfort, a situation that can reduce / inhibit the release of oxytocin hormone, namely anxiety, sadness, anger, upset, or confusion so that breast milk does not meet the needs of the baby / no milk comes out.(Nurul Azizah, 2019).

Efforts that can be made by breastfeeding mothers are consuming food, the food consumed by breastfeeding mothers greatly affects breast milk production. If the food that mothers eat contains enough nutrients with a regular diet, then breast milk production will run smoothly, one of the types of food that can be consumed to facilitate breast milk production is papaya leaves.(Rohmatun Nafi'ah, Susan Prima Devi, 2019).

Papaya leaves are one of the galactogogues that contain quersetin which can activate prolactinan hormones and contain papain enzymes and potassium, the function of enzymes is useful for breaking down the protein eaten while potassium is useful for meeting potassium needs during breastfeeding, because if you lack potassium then the body will feel tired, and potassium deficiency also causes mood swings to become depressed, while breastfeeding mothers must think positively and be happy.(Aprilia et al., 2020)

Research conducted by Kusumaningrum (2017) states that there is a difference in the composition of breast milk expenditure in the pre-test group and the post-test group or it can be said that there is a significant effect after papaya leaf attachment on the smooth production of breast milk

with the results of Correlation = 0.994 and Sig.=0.000 (p <0.05) in 32 respondents, indicating that there is a difference in composition. (Kusumaningrum, 2017), the same as research by Hapsari (2017) states that there is an effect of papaya leaf extract on breast milk adequacy (p = 0.038, α = 0.05). In 32 respondents for the intervention group and control group(Hapsari et al., 2016)

Based on preliminary studies conducted, according to reports at Aisyah Qurratu 'ain Hospital, data on postpartum women in May 2021 were obtained, namely the incidence of adequacy of 50 cases. Of the adequacy of 38, about 76% of mothers said that breast milk was not smooth and milk did not come out after giving birth and new milk came out two days after giving birth but the amount was small and the amount of breast milk was small, so the mother gave formula milk..

Based on this background, the researcher aims to conduct a study to find out "whether papaya leaf decoction has an effect on breast milk adequacy in postpartum women at Aisyah Qurratu 'ain Hospital Bekasi West Java in 2021".

RESEARCH METHODS
This study uses a quasi-experimental research design with a pretest posttest control group design where there are two groups of subjects as treatment and control groups that are randomly selected and both receive a pretest and posttest. This design is used to compare the results of papaya leaf administration before and after treatment and compare the two groups..

The population in this study were all postpartum mothers at RSIA Aisyah Qurratu 'ain Bekasi in 2021. 30 people. The sampling technique used was research sampling using purposive sampling technique. The number of samples obtained was 30 respondents with the division of the treatment group of 15 respondents and the control group of 15 respondents. conduct interviews, consent of respondents and measurement of breast milk adequacy (pretest) then respondents were given 300gram boiled papaya leaves to be consumed once a day for 7 days and coordinated with respondents to provide documentation when consuming papaya leaves after day 7 then interviews and measurement of breast milk adequacy (Posttest).

The instrument used in the study was an observation sheet (pretest and posttest) Indicators or signs of measuring breast milk adequacy are that the baby urinates at least 6 times in 24 hours with a clear to light yellow colour, the baby often defecates yellowish coloured "seeds", the baby looks satisfied, feels hungry at times, wakes up and sleeps enough. the baby at least suckles 8-12 times in 24 hours the baby is gaining weight, the breasts feel empty.

Univariate analysis was conducted to determine the mean value of breast milk adequacy markers pretest and post test. Bivariate analysis was conducted to determine the effect between papaya leaves and breast milk adequacy in postpartum mothers using the *Paired T-test.*

RESEARCH RESULTS
Univariate Analysis
Based on table 1, it shows that in the intervention group the average value of breast milk adequacy pretest was 41.13 and the average value of breast milk adequacy post test was 92.22, meaning that there was a significant increase in the average value of breast milk adequacy after being given papaya leaves. papaya leaves.

Table 1
Mean values of breast milk adequacy before and after in the intervention group and control group

Variabel	n	Min	Max	Mean	SD
Intervention group					
Pretest	15	16.77	66.67	41.13	17.63
Postest	15	66.67	100.00	92.22	12.38
control group					
Pretest	15	16.77	66.67	44.45	16.24
Postest	15	16.77	100.00	66.67	28.15

While in the control group, the mean value of breast milk adequacy pretest was 44.45 and the mean value of breast milk adequacy posttest was 66.67, meaning that there was an increase in the mean value of breast milk adequacy after being given leaflet education.

Bivariate Analysis
Based on Table 2 that in the intervention group, the Sig. (2-tailed) of 0.003 < α 0.05, meaning that there is an effect of giving papaya leaves to increase breast milk adequacy.

While in the control group the Sig. (2-tailed) value of 0.004 < α 0.05, meaning that there is an effect of leaflet education to increase breast milk adequacy.

It can be concluded that there is an effect between giving papaya leaves (intervention group) and giving leaflet education (control group) on breast milk adequacy.

Table 2
Differences between Papaya Leaves and Leaflets on Breast Milk Adequacy of Breastfeeding Mothers

Group	n	breastmilk adequacy	Mean	Sig. (2-tailed)
Intervention	15	Pretest	41,13	0.003
		Posttest	92.22	
Control	15	Pretest	44.45	0.004
		Posttest	66.67	

Table 3
Comparison of Papaya Leaves and Leaflets on Breast Milk Adequacy of Breastfeeding Mothers

Group	breastmilk adequacy	Mean	SD	Mean Difference	Sig (2 tailed)
Intervensi	Posttest	92.22	12.38	25.54	0.000
Kontrol	Posttest	66.67	28.15		

Based on table 3, the results of the independent t-test test obtained a Sig. (2-tailed) of 0.000 <0.05, it can be concluded that there is a significant difference in the average value of breast milk adequacy in the provision of papaya leaves compared to the leaflet education group. it can be interpreted that the experimental group is higher in breast milk adequacy compared to the control group.

DISCUSSION

Breast milk adequacy before and after giving papaya leaves to postpartum mothers in the intervention group (papaya leaves) and control group (leaflet).

Based on the results of the study in the intervention group, the average value of breast milk adequacy pretest was 41.13 and the average value of breast milk adequacy post-test was 92.22, meaning that there was a significant increase in the average value of breast milk adequacy after being given papaya leaves.

Meanwhile, in the control group, the mean value of pretest breast milk adequacy was 44.45 \

Research conducted by Triana (2022) found that there was a difference in breast milk fluency scores before the intervention in the experimental group and the control group. there was a difference in breast milk expenditure scores between the experimental group and the control group after being given papaya fruit vegetables. in postpartum mothers at the Puskesmas Padaawas Garut Regency(Triana et al., 2022)

Research conducted by Sri Banun (2015) stated that breast milk production before consuming papaya fruit the average frequency of breastfeeding was 5.7 times with a standard deviation of 0.80131 and after consuming papaya fruit the average frequency of breastfeeding increased to 9.75 times with a standard deviation of 0.78640. The correlation between the two variables was 0.793 and the difference in the average value of increased breast milk production in mothers who did not consume and who consumed papaya fruit was 4.05000 with a sig of 0.000. it means that the average breast milk production before and after consumption of papaya fruit is different. it can be stated that the provision of papaya fruit can affect the increase in breast milk production of breastfeeding mothers in Wonokerto Village in the Peterongan Health Centre area, Jombang Regency.(Istiqomah et al., 2015)

Papaya leaves contain lactagogues that help increase the rate of secretion and production of breast milk by directly stimulating protoplasmic activity in the secretory cells of the mammary glands and secretory nerve endings in the mammary glands which results in increased milk secretion, or stimulating the prolactin hormone which is a lactagonistic hormone to the mammary glands in the cells of the alveolar epithelium which will stimulate lactation.(Ainy, 2020)

Lactagogue is a substance that can increase and smoothen breast milk sufficiency. Until now, people still put great trust in lactagogues from natural traditional ingredients compared to modern or synthetic factory products because it has been proven based on experience for generations. (Sugita, 2020)

According to the researcher's assumption, if added to the vegetable diet of breastfeeding mothers and consumed regularly, papaya leaves increase breast milk production in postpartum mothers due to the content of papaya leaves.

Effect of Papaya Leaves and Breastfeeding Education on Adequacy of Breast Milk in Postpartum Mothers Given Papaya Leaves and Breastfeeding Education

Based on the research results, it was found that there were differences in the results of breast milk adequacy before and after giving papaya leaves to postpartum mothers, meaning that there was an effect of giving papaya leaves and breastfeeding education on breast milk adequacy, but the increase in breast milk adequacy was more significant in the treatment group than in the control group.

Papaya leaves contain Lactagogum substances have an effect in stimulating the release of oxytocin and prolactin hormones such as alkaloids, polyphenols, steroids, flavonoids which are effective in increasing the secretion and release of breast milk. The mechanism of action of lactagogum in helping to increase the rate of secretion and adequacy of breast milk is by directly stimulating protoplasmic activity in the secretory cells of the mammary glands and secretory nerve endings in the mammary glands which results in increased milk secretion, or stimulating the prolactin hormone which is a lactagonistic hormone to the mammary glands in the cells of the alveolar epithelium which will stimulate lactation.(Satuhu, 2010)

Other Research Hasni (2021) that breast milk production before consumption of papaya fruit vegetables, the average frequency of breastfeeding was 8.7 times with a standard deviation of 1.174 and after consuming papaya fruit vegetables increased to 12.95 times with a standard deviation of 2.395, the value of t count = 7.701 is greater than the value of t table = 1.74 (t count> t table) with Sig 0.000. Because Sig < 0.05, it means that the average milk production before and after consumption of papaya fruit is different. Thus it can be stated that there is an effect of green papaya fruit vegetable consumption on increasing breast milk production in nursing mothers at Caile Health Centre,(Hasrini et al., 2021)

Breast milk production in primiparous postpartum mothers between those who consume young papaya vegetables and moringa leaf vegetables on baby weight gain at the age of 30 days with a p value of 0.001. As for effectiveness, consumption of moringa vegetables is more effective in increasing baby weight at 30 days of age

compared to consuming young papaya vegetables..(Aliyanto & Rosmadewi, 2019)

Previous research showed that the difference in treatment with 30 respondents on the fluency of breast milk before being given papaya leaf vegetables with a mean of 4.83 standard deviation 1.020 standard error 0.186 and after being given papaya leaf vegetables with a mean of 7.40 standard deviation 0.855 standard error 0.156 with a difference of 2 means of 2.57, standard deviation 1.278, standard error 0.233. The results of the statistical test obtained a p-value of 0.000 (<0.05) which means that there is an effect of giving papaya leaf vegetables on the smoothness of breast milk in postpartum women in the Kotabumi II Health Centre Working Area, Lampung Regency.(Aprilia et al., 2020)

Papaya leaves contain saponins, alkaloids, minerals, vitamins and papain enzyme. Papaya leaf sap, which contains papain enzyme, has the same effect as oxytocin. Prolactin and oxytocin hormones play a role in increasing breast milk adequacy. Lactagogum has the effect of stimulating the release of oxytocin and prolactin hormones such as alkaloids, polyphenols, steroids, flavonoids which are effective in increasing the secretion and release of breast milk..(Syahidatul Ulya, 2018)

The results of Nahak's research (2022) stated that the frequency of smooth breastfeeding before being given papaya leaf vegetables obtained an average score of 5.33 and the frequency of breastfeeding after giving papaya leaves obtained an average of 12.0 There is an effect of giving papaya leaf vegetables on the smoothness of breast milk in nursing mothers obtained P-value = 0.000. There is an effectiveness of giving papaya leaf vegetables before and after the intervention of giving papaya leaf vegetables.(Nahak et al., 2022)

According to Hapsari (2016), 10 respondents (62.5%) in the control group were in the insufficient breast milk category, while in the intervention group 11 respondents (68.8%) were in the sufficient breast milk category. Analysis of breast milk adequacy in the control group and intervention group with the Mann Whitney Test obtained an Asymp. Sig. (2-tailed) with a value of p = 0.038. The value of p=0.038 <a (0.05), means that there is an effect of papaya leaf extract on breast milk adequacy (Hapsari et al., 2016)

These results show that papaya leaves contain Papain Enzyme and potassium, the enzyme function is useful for breaking down the protein eaten while potassium is useful for fulfilling the need for potassium during breastfeeding, because if there is a lack of potassium, the body will feel tired, and

potassium deficiency also causes mood swings to become depressed, while breastfeeding mothers must think positively and be happy.(Rahmawati & Silviana, 2019)

Papaya leaf is a plant that contains vitamins needed for infant growth and maternal health so that it can be a very potential source of nutrition. High in protein, high in fat, vitamins, calcium (Ca), and iron. (Fe) (Putri, 2020)

Papaya leaf which is a plant that contains vitamin A 1850 SI; vitamin BI 0.15 mg; vitamin C 140 mg; calories 79 calories; protein 8.0 grams; fat 2gram; hydrate charcoal 11.9 grams; calcium 353 mg; phosphorus 63 mg; iron 0.8 mg; water 75.4 grams; carposide; papayotin; carpai; carposite; lactogogum; and vitamins needed for baby growth and maternal health, so it can be a very potential source of nutrition. The content of high protein, high fat, vitamins, calcium (Ca), and iron (Fe) in papaya leaves functions for the formation of haemoglobin in the blood to increase, it is expected that O2 in the blood increases, metabolism also increases so that brain cells function properly..(Yuviska & Yuliasari, 2019)

The content of papaya leaves also functions to increase the formation of haemoglobin in the blood, it is hoped that oxygen in the blood will increase, metabolism will also increase so that brain cells function properly(Widowati et al., 2019)

In addition, papaya leaves also contain papain enzymes and potassium, the enzyme function is useful for breaking down the protein eaten while potassium is useful for fulfilling potassium needs during breastfeeding. Because if there is a lack of potassium, the body will feel tired, and potassium deficiency also causes mood swings to become depressed, while while breastfeeding mothers must think positively and happily.(Korompis et al., 2023)

According to the assumptions of researchers, the benefits of papaya leaves will help increase the rate of secretion and production of breast milk by stimulating protoplasmic activity in the secretory cells of the mammary glands and secretory nerve endings in the mammary glands which results in increased milk secretion, or stimulating the prolactin hormone which is a lactagonistic hormone to the mammary glands in the cells of the alveolar epithelium which will stimulate lactation

CONCLUSIONS

There was an effect of giving papaya leaves and breastfeeding education on breast milk adequacy, but the increase in breast milk adequacy occurred more significantly in the treatment group (papaya leaves) than in the control group (education).

SUGESTION

Efforts are needed to increase the knowledge of mothers to manage vegetable menus that can increase breast milk production during the breastfeeding period. It is recommended to socialise the use of papaya leaves as nutrients needed by breastfeeding mothers.

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THE EFFECT OF RED GINGER WATER ON REDUCE PAIN OF PRIMARY DYSMENORRHEA IN ADOLESCENT

Sundari[1], Nita Evrianasari[2*], Nurul Isnaini[3]

[1,2,3] Midwifery Study Program, Malahayati University
Email Korespondensi : nita.nuninosa@gmail.com

ABSTRAK PENGARUH AIR JAHE MERAH TERHADAP PENURUNAN NYERI DISMENOREA PRIMER PADA REMAJA

Latar Bealakang Dismenorea primer adalah nyeri menstruasi yang dirasakan tanpa adanya kelainan pada alat reproduksi. Dengan kata lain adalah rasa nyeri yang biasa diarasakan oleh perempuan saat mengalami haid, bahkan sebagian perempuan yang selalu merasakan nyeri setiap menstruasi datang. Rasa nyeri ini biasanya terjadi disebabkan oleh zat Prostaglandin yang akan merangsang otot otot halus dinding rahim berkontraksi, makin tinggi kadar prostaglandin kontraksi akan makin kuat, sehingga rasa nyeri yang dirasakan juga makin hebat (Laila Najmi, N 2021). Tujuan penelitian adalah untuk mengetahui adanya pengaruh dari pemberian Air Jahe Merah dan Tablet Ibuprofen terhadap penurunan nyeri dismenorea primer pada siswi yang mengalami dismenorea.

Metode penelitian ini dengan design *pra- eksperimental* dan pendekatan rancangan *two-group pretest-posttest*, alat uji normalitas menggunakan *Shapiro-Wilk* dengan p value α = 0,05 dan alat uji pengaruh menggunakan statistik non-parametrik *Wilcoxon Signed Ranks Test* dan *Mann Withney*. Penelitian dilakukan pada bulan Maret – Juli 2023 dengan 60 responden yang di pilih secara *Purposive Sampling*, pengukuran skala nyeri menggunakan metode NRS sebelum dan sesudah diberikan intervensi.

Hasil penelitian adanya pengaruh perubahan yang signifikan terhadap penurunan intensitas nyeri dismenorea primer dengan pemberian *air jahe merah* dan *tablet ibuprofen* dengan nilai p sebesar 0,000 (a < 0,05). Penurunan nyeri yaitu 30,68 untuk air jahe dan 30,32 untuk ibupropen dengan begitu perbedaan pengaruh nya hanya berselisih 0,36. Kesimpulannya terdapat pengaruh pemberian air jahe merah dan tablet ibuprofen terhadap penurunan intensitas nyeri dismenorea primer. Diharapkan dapat dijadikan sebagai alternatif pengobatan secara non farmakologi dan kepada tenaga kesehatan dapat mengedukasi lebih banyak pada wanita yang mengalami disminorea.

Kata Kunci : Air Jahe Merah, Tablet Ibu Profen, Dismenorea Primer, Nyeri

ABSTRACT

Back Ground Primary dysmenorrhea is menstrual pain that is felt without any abnormalities in the reproductive organs. In other words, it is a pain that is usually felt by women when experiencing menstruation, even some women who always feel pain every time menstruation comes. This pain usually occurs due to Prostaglandin substances that will stimulate the smooth muscle muscles of the uterine wall to contract, the higher the prostaglandin levels the contraction will be stronger, so the pain felt is also more intense (Laila Najmi, N 2021). The purpose of the study was to determine the effect of giving Red Ginger Water and Ibuprofen Tablets on reducing primary dysmenorrhea pain in female students experiencing dysmenorrhea.

This research method uses a pre-experimental design and a two-group pretest-posttest design approach, a normality test tool using Shapiro-Wilk with a p value of α = 0.05 and an influence test tool using non-parametric statistics Wilcoxon Signed Ranks Test and Mann Withney. The research was conducted in March - July 2023 with 60 respondents selected by purposive sampling, measuring the pain scale using the NRS method before and after the intervention.

The results of the study showed a significant effect of change on reducing the intensity of primary dysmenorrhea pain by giving red ginger water and ibuprofen tablets with a p value of 0.000 (a <0.05). The decrease in pain is 30.68 for ginger water and 30.32 for ibupropen so the difference in influence is only 0.36. In conclusion, there is an effect of giving red ginger water and ibuprofen tablets on reducing the intensity of primary dysmenorrhea pain. It is expected to be used as an alternative to non-pharmacological treatment and to health workers can educate more women who experience dysminorrhea.

Keywords: Red Ginger Water, Ibu Profen Tablet, Primary Dysmenorrhea

INTRODUCTION

Adolescent or teenager is a transition phase

from children to adults, adolescence can be a difficult phase for some people. Starting from changes in physical form to menstrual problems, especially for adolescent girls. Teenagers who get their first menstruation become a physical milestone and a sign that they have become a woman. However, this can cause confusion, anxiety, and worry. Especially if she experiences problems during menstruation such as irregular menstruation, dysmenorrhea or it could be premenstrual syndrome (PMS) (Fitria Ika, A 2019).

Dysmenorrhea is a complaint that is often experienced by women in the lower abdomen. Derived from Greek, dis which means difficult, painful, or abnormal; meno means month; and rhea which means flow. If interpreted as a whole then dysmenorrhea is a painful or abnormal monthly flow. Menstrual pain is a disease that has been known for a long time. The pain felt during menstruation does not only occur in the lower abdomen. Some teenagers feel in the lower back, waist, pelvis, upper thigh muscles, and calves. The pain can be caused by abdominal muscle contractions that occur continuously while bleeding. These very mild contractions then cause the muscles to tighten. Muscle tension not only occurs in the abdominal muscles but also the muscles supporting the abdominal muscles found in the lower back, waist, pelvis, and thighs to calves.

Experts divide dysmenoea into two parts, namely Primary and Secondary Primary dysmenorrhea is menstrual pain that is felt without any abnormalities in the reproductive organs. In other words, it is the pain that is usually felt by women when experiencing menstruation. This pain usually occurs after 12 months or even more starting from the first menstruation. There are even some women who always feel pain every time menstruation comes (Laila Najmi, N 2021).

Primary dysmenorrhea is caused by Prostaglandins, which are natural chemicals produced by cells of the uterine wall lining that contract. In some women this event can feel strong and greatly interfere with their activities (Laila Najmi N, 2021).

Factors causing primary dysmenorrhea are: Menarche, Menstrual cycle, Excessive amount of menstrual fluid, Psychological factors (obesity), Smoking, Drinking Alcohol, History of mother or siblings experiencing dysmenorrhea. (Prmardika, Fitriana 2019). The characteristics of primary dysmenorrhea are: Irritability, Nausea and Vomiting, Diarrhea, Back, hip, uterus pain, Headache, Fever, Weakness (Pramardika, Fitriana 2019). Primary dysmenorrhea can be treated non-pharmacologically such as:

Hot and cold therapy, exercise and yoga, massage, relaxation / breathing techniques, consuming foods / drinks containing Vit. A, B1, C, Gingerol, Zingiberene, Oleoresin, and Essential Oil Content (can be found in red ginger).

The World Health Organization (WHO) said that in 2017, the incidence of dysmenorrhea in the world reached 1,769,425 people (90%) of women who experience dysmenorrhea with 10-15% experiencing severe dysmenorrhea. The incidence is very large, on average almost more than 50% of women experience dysmenorrhea (Putri 2017 in Yuliani, E 2022). Secondary dysmenorrhea is usually found if there is a disease or disorder of the reproductive organs. Pain can be felt before, during, and after menstruation. The cause of the occurrence can be caused by chronic salpingitis, which is a long infection in the channel connecting the uterus (uterus) with the egg bladder (ovary). Treatment requires a doctor's consultation and treatment with antibiotics and anti-inflammatories (Laila Najmi, N 2021).

The prevalence of women experiencing dysmenorrhea in Indonesia is estimated to be 55% of women of productive age tormented by pain during menstruation. The incidence of primary type dysmenorrhea in Indonesia is around 54.89% which causes them to be unable to do any activities and this will reduce the quality of life in each individual. Dysmenorrhea is one of the most common gynecological problems and can affect more than 50% of women causing inability to perform daily activities for 1 to 3 days every month. The absence of adolescents in school is one of the consequences of primary dysmenorrhea reaching approximately 25% (Putri 2017 in Yuliani, E 2022). In Indonesia, the percentage of primary dysmenorrhea is 64.8% and secondary dysmenorrhea is 19.36%. In adolescent girls, primary dysmenorrhea symptoms are found 1 to 2 years after experiencing the first menstruation. Dysmenorrhea causes adolescents to be unable to carry out activities as usual (BKKBN 2014 in Mariza, A 2019).

The incidence of dysmenorrhea is based on data from the Lampung Provincial Health Office in 2007, data on dysmenorrhea cannot yet be classified. The incidence of primary dysmenorrhea in adolescents is estimated to be 1.2% to 1.35% of the number of patients who examine themselves to health workers. Based on information obtained from the Lampung Health Office, the last dysmenorrhea data was only found until 2007, because in Indonesia many women who experience dysmenorrhea do not report themselves to doctors or health workers

(Lampung Health Profile, 2007 in Pangesti A, R. Pranajaya, Nurchairina 2018). The survey results from the Indonesian Family Planning Association (PKBI) Bandar Lampung branch of dysmenorrhea are in the first place that is often complained of by women, which is 65.3%. In addition to irregular menstrual cycles. The incidence of dysmenorrhea is higher in a group of adolescents aged 10-20 years at 71.4% (PKBI Bandar Lampung, Nurchairina, 2018 in Yuliani, E. 2022).

From the results of a survey of researchers at the boarding school Tahfidz Al- Qur'an Daar Ashshofa Bandar Lampung city, the incidence of primary dysmenorrhea was higher at 85.71% with the number of adolescent female students suffering from primary dysminorrhea as many as 60 people.

This study is in line with research entitled "The Effect of Giving Red Ginger Herb (Zingiber Officinale Roscoe) And Brown Sugar Against Changes in Menstrual Pain of Class VIII Students of SMPN 1 Bengkulu Tengah" with the results there is an effect of giving red ginger herb on changes in menstrual pain in class VIII students of SMPN 1 Bengkulu Tengah which is indicated by the results of the Wilcoxon Signed Rank- Test test by showing the value Asymp. sig (2-tailed) = 0.000 <0.05 for both paired groups, meaning the results are significant (Ruri Maiseptya Ruri, Abasri 2019).

Ginger is useful for reducing dysmenorrhea pain due to the content of Zingiberene, Oleoresin, Gigerol, and Acirin Oil, Vitamins A, B1, C, and other compounds that are effective as anti-inflammatory agents as analgesics or pain relievers anti-coagulants prevent blood clots (Sakri M, F 2020). It can also regulate the production of prostaglandins which are known to be the main cause of menstrual pain and also help stimulate the body to control pain in the body. The essential oil content that the body receives increases the ability of a person's body to neutralize cramps, especially during menstruation. In the medical system, ginger is also used to treat menstrual pain by stopping the action of prostaglandins, which cause pain and inflammation in the blood vessels and relieve cramps. It is known that the aleoresin content in red ginger rhizome has antioxidant activity above that of vitamin E. Gingerol in ginger is anticoagulant, which can prevent blood clots. This is very helpful in menstrual blood discharge (Mariza, A., & Sunarsih. 2019).

RESEARCH METHODS

This study uses a pre-experimental design by using a two-group pretest- posttest design approach, namely by revealing the causal relationship by involving one group of subjects and a control group.

Subject and control groups were observed before the intervention, then observed again after the intervention to determine the effect of the treatment. Researchers used Shapiro-Wilk normality test analysis. After testing the normality of the data, then the effect test was carried out using the Wilcoxon Signed Ranks Test Non-Parametric statistical test as an alternative to the Paired Sample T-test parametric statistical test. Meanwhile, to find out the difference in the value of the two independent samples, the Mann Withney test was carried out again, the decision-making conditions were only two samples and the two were not related to one another, and the data must not be normally distributed, the number of samples in both groups was the same. This research was conducted from March 2023 - July 2023 with a population of 70 students then the sample was selected by purposive sampling so that 60 research samples were obtained. Data collected based on the results of questionnaires and observations using the NRS scale. This study was conducted during the first 3 days of menstruation. On day 1 the researcher gave the NRS scale sheet to determine the respondent's pain level before treatment, then the researcher gave 250 ml red ginger water treatment 4 times / day or with a calculation of time every 6 hours, after giving the treatmnent on day 3 the researcher gave the post test sheet back to the respondent to determine the value of the decrease in pain scale after treatment.

RESEARCH RESULT

Based on table 1, it can be seen that the average value of minimum menstrual pain is 5 before being given red ginger water treatment in the intervention group with 30 samples including the moderate dysmenorrhea category and a maximum value of 8 categories of severe diemenorrhea but can still be controlled by respondents with an average mean value of menstrual pain of 6.20%.

Controlled by respondents with an average mean value of menstrual pain of 6.20% while the average value of minimum menstrual pain after being given the red ginger water intervention, the value dropped to 3 and a maximum value of 6 with an average mean value of 4.27%.

While for the control group, it is known that the average value of menstrual pain before being given Profen tablets is the minimum value 5 is in the category of moderate dysmenorrhea and the maximum value of 7 is in the category of severe dysmenorrhea but can still be controlled by respondents with an average mean value of menstrual pain of 6.23% while the average value of minimum menstrual pain after being given Mrs.

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Profen's intervention is 2 and a maximum value of 6

with an average mean value of 4.23%.

Table 1
Mean Value of Pre Test and Post Test Primary Dysmenorrhea Pain Intensity Test

Variabel	N	Min	Max	Mean (%)
Red ginger water pre test	30	5	8	6.20
Red ginger water post test	30	3	6	4.27
Ibuprofen Tablet Pre Test	30	5	7	6.23
Ibuprofen Tablet Post Test	30	2	6	4.23

Table 2
Test Of Effect of Red Ginger Water
Wilcoxon Signed Ranks Test

Variabel		N	Mean Rank	p- value
Red ginger water pre test	Negative Ranks	30	15,50	
Red ginger water post test	Positive Ranks	0	,00	,000
	Ties	0		

It can be seen from table 2 the value of Asymp. Sig. (2-tailed) in the pre-test and post-test with a value of 0.000 where the value is smaller than 0.05, thus there is a difference in value before and after the treatment of giving red ginger water to the dysmenorrhea pain scale in 30 respondents. The value of negative ranks or the difference that is negative from the Pre-test and Post-test is 30, meaning that there is a change in value before and after being given red ginger water.

Table 3
Effect Test of Ibuprofen Tablets
Wilcoxon Signed Ranks Test

Variabel		N	Mean Rank	p- value
Ibuprofen Tablet Pre Test	Negative Ranks	30	15,50	
Ibuprofen Tablet Pre Test	Positive Ranks	0	,00	,000
	Ties	0		

Can be seen from table 3 the value of Asymp. Sig. (2-tailed) in the pre-test and post-test with a value of 0.000 where the value is smaller than 0.05, thus there is a difference in value before and after the treatment of giving profen tablets to the dysmenorrhea pain scale in 30 respondents.

Table 4
Difference Analysis of Result Value
Mann Withney Test

	Group	N	Mean Rank	Sum Of Ranks
Post Test	Red Ginger Water	30	30,68	920,50
Dysmenorrhea	Ibuprofen Tablet	30	30,32	909,50

By using the Mann Withney test, which compares the difference between two independent groups in the same test and the same number of samples with data not normally distributed. It can be seen from table 4.10 that the mean rank in the red ginger water group is 30.68 and the mother profen tablet group is 30.32, so there is a difference of 0.36 between the two groups, there is a difference in the sum of rank with a difference of 11 between the two groups, and there is a difference in the final value in Mann Withney U which is 444,500 and in Wilcoxon W which is 909,500.

Tabel 5

Test Statistics[a]
Post Test

Mann-Whitney U	444,500
Wilcoxon W	909,500
Z	-,088
Asymp. Sig. (2-tailed)	,930

RESEARCH RESULTS
Univariate Analysis

Based on the results of statistical data processing of this study, it is known that the mean value of primary dysmenorrhea menstrual pain before being given the Red Ginger Water intervention (pre-test) is 6.20% before being given the intervention (pre-test) the minimum value is 5 using the calculation of the NRS 0-10 pain scale so that it is included in the moderate dysmenorrhea category, and the maximum value of 8 is included in the severe dysmenorrhea category. Then the researchers gave treatment to the intervention group in the form of Red Ginger Water for 3 days, the results showed a decrease from the pre-test value to the minimum post-test value of 3 including the mild dysmenorrhea category and a maximum value of 6 including the moderate dysmenorrhea category with a mean value of 4.27%.

Research conducted by (Giti Ozgoli, M.Sc, Marjan Goli, M.Sc, and Fariborz Moattar, Ph.D, 2009) with the title "Comparison of the Effects of Ginger, Mefenamic Acid, and Ibuprofen on Pain in Primary Dysmenorrhea Women".

Primary dysmenorrhea is defined as pelvic pain around the time of menstruation in the absence of an identifiable pathological lesion, presenting from menarche. It is a frequent cause of absenteeism and medical visits, and affects both personal and economic aspects of life. Some patients with primary dysmenorrhea do not respond to treatment with NSAIDs or oral contraceptives. In addition, some women have contraindications to these treatments.

As a result, researchers have investigated many alternative/complementary treatments such as herbal and dietary therapies 6 behavioral interventions 7 acupressure 8 and aromatherapy 9 Zingiber rhizome ginger. Each group took their medication four times a day for three days from the start of their menstrual period. In the first group, patients received capsules containing 250 mg of ginger rhizome powder. The second group got 400 mg ibuprofen capsules. The conclusion was that ginger was as effective as mefenamic acid and ibuprofen in relieving pain in women with primary dysmenorrhea. Further studies regarding the effects of ginger on other symptoms associated with dysmenorrhea, the efficacy and safety of various doses and durations of ginger treatment, and the exact mechanism of action are needed.

Bivariate Analysis

Based on the results of research and data processing using the SPSS version 24 application with the Wilcoxon Sign Rank Test, the Asymp. Sig. (2-tailed) pre-test and post-test with a value = 0.000 <0.05 thus

There is a difference in the value before and after the treatment of giving Red Ginger Water and Mrs. Profen Tablets on the dysmenorrhea pain scale in each of the 30 adolescent respondents of Pondok Tahfidz Al-Qur'an Daar Ashshofa. The results also show that the value of the decrease in pain intensity of each individual varies, there are some who experience constant pain intensity but there is a change in the value of pain intensity numbers. Meanwhile, to find out the difference in values between the intervention group and the control group, the Mann Wihney Test was carried out, the results of the difference between the mean rank value with a difference of 0.36 and the sum of rank with a difference of 11 in both groups. Thus the conclusion is that the administration of Red Ginger Water is more recommended than Profen Tablets because of the more significant decrease in sensitivity.

This research is in line with a study entitled "The Effect of Giving Red Ginger Decoction Water on Decreasing Dysmenorrhea in 8th Semester Students of Stikes Widya Dharma Husada Tangerang" with the results of research on dysmenorrhea on a mild scale 15 respondents (50%) while on a moderate scale 14 respondents (46.7%). Based on data analysis, the mean value is 1.100 and the probability (p) is 0.000, it can be concluded that there is an effect of red ginger boiled water on reducing Dysmenorrhea (Betty, Ayamah. 2021).

In the opinion of researchers from the results of the assessment and provision of treatment for both the intervention group (Red Ginger Water) and the control group (Mrs. Profen Tablets), both of them have the same effect on reducing primary dysmenorrhea pain but with a difference in the value of a decrease of 0.36, so the level of sensitivity of red ginger water is less than that of profen tablets. Then the comparison of age and duration of menstruation affects the results of treatment. Pharmacological therapy such as the administration of Profen tablets which are included in the category of non-steroidal anti-inflammatory drugs whose use must be in accordance with the doctor's recommendations, while the chemicals contained if used in the long term

can have harmful effects on health.

CONCLUSION

It is known the effect of red ginger water and Profen tablets on the intensity of menstrual pain in adolescents of Pondok Tahfidz Al- Qur'an Daar Ashshofa. There is a significant effect on reducing the intensity of primary dysmenorrhea menstrual pain by giving red ginger water intervention and profen tablets control group with a value (Asym Sig 2 Tailed in Wilcoxon Sign Rank Test 0.000 <0.05). And Mann Withney test with a mean difference of 0.36 and sum of rank 11 between the two groups, thus the sensitivity of the effect of red ginger water is better than profen tablets.

SUGGESTION

The results of this study are expected to be an additional reference for education in providing insight to students as additional teaching materials. And for adolescents to use non-pharmacological therapy of Red Ginger Water when experiencing dysmenorrhea so that it can reduce menstrual pain.

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Citra Baiduri, Yuli Yantina, Vida Wira Utami, Dewi Yuliasari

THE EFFECT OF OXYTOCIN MASSAGE ON BREAST MILK EXPENDITURE IN POST PARTUM MOTHERS

Citra Baiduri[1], Yuli Yantina[2], Vida Wira Utami[3], Dewi Yuliasari[4]

[1234]Health Sciences Faculty, Midwifery Study Program, Malahayati University
*Email correspondence yuliyantina@malahayati.ac.id

ABSTRAK PENGARUH PIJAT OXYTOCIN TERHADAP PENGELUARAN ASI PADA IBU PASCA PARTUM

Latar belakang: Besarnya manfaat ASI tidak di imbangi oleh peningkatan perilaku pemberian ASI sehingga bayi tidak mendapatkan ASI dengan baik. Data di Indonesia tahun 2021 menyebutkan bahwa hanya sebesar 52,5% atau hanya setengah dari 2,3juta bayi berusia kurang dari 6 bulan yang mendapat ASI eklusif. Tidak semua ibu post partum langsung mengeluarkan ASI karena pengeluaran ASI, di RSUD Dr. H. Abdul Moeloek Provinsi Lampung sebanyak 50% ibu mengeluh bahwa produksi ASI nya kurang lancar dan produksi ASI sedikit. Teknik untuk memperbanyak ASI antara lain pijat oksitosin. Melalui pijatan atau rangsangan tulang belakang, neurotransmitter akan merangsang medulla oblongata langsung mengirim ke hipotalamus di hypovise posterior untuk mengeluarkan oksitoksin sehingga menyebabkan keluarnya ASI.

Tujuan: Tujuan dari penelitian ini adalah diketahui pengaruh pijat oksitosin tehadap pengeluaran ASI pada ibu post partum.

Metode: Jenis penelitian ini adalah kuantitatif, menggunakan rancangan quasi eksperimental dengan menggunakan *posttest only with control group design*. Populasi penelitian ini adalah seluruh ibu postpartum di RSUD Dr. H. Abdul Moeloek Provinsi Lampung, dengan jumlah sampel sebanyak 32 orang, menggunakan *accidental sampling*. Variabel independent pada penelitian ini adalah pijat oksitosin, dan variabel dependennya adalah Pengeluaran ASI. Uji stastistik menggunakan uji T independen.

Hasil: Hasil penelitian diperoleh rata-rata pengeluaran ASI pada kelompok yang diberi perlakuan pijat oksitosin 7,338cc, sedangkan pada kelompok yang tidak diberi perlakuan pijat oksitosin adalah 4,956 cc. Dari hasil uji statistik diperoleh *p*-value =0,000.

Kesimpulan: Ada pengaruh pijat oksitosin terhadap pengeluaran ASI pada ibu post partum.

Saran: Diharapkan tenaga medis khususnya bidan dapat memberikan manajemen laktasi kepada ibu nifas dengan cara melakukan pijat oksitosin

Kata Kunci : Pijat oksitosin, pengeluaran ASI

ABSTRACT

Background: The magnitude of the benefits of breastfeeding is not matched by an increase in breastfeeding behavior so that the baby does not get breast milk properly. Data in Indonesia for 2021 states that only 52.5% or only half of the 2.3 million babies aged less than 6 months are exclusively breastfed. Not all post partum mothers immediately express breast milk because of milk expenditure, at Dr. H. Abdul Moeloek Lampung Province as many as 50% of mothers complained that their milk production was not smooth and less milk production. Techniques for increasing breast milk include oxytocin massage. Through massage or spinal stimulation, neurotransmitters will stimulate the medulla oblongata directly sending to the hypothalamus in the posterior hypovise to release oxytocin, causing milk to be released.

Purpose: The purpose of this study was to determine the effect of oxytocin massage on breast milk expenditure in post partum mothers.

Methods: This type of research is quantitative, using a quasi-experimental design using a posttest only with control group design. The population of this study were all postpartum mothers at RSUD Dr. H. Abdul Moeloek Lampung Province, with a total sample of 32 people, using accidental sampling. The independent variable in this study was oxytocin massage, and the dependent variable was breast milk expenditure. The statistical test uses an independent T test.

Result: The results showed that the average milk production in the group that was treated with oxytocin massage was 7.338 cc, while in the group that was not treated with oxytocin massage it was 4.956 cc. From the results of statistical tests obtained p-value = 0.000.

Conclusion: is an effect of oxytocin massage on breastfeeding in post partum mothers.

Suggestion: It is hoped that medical personnel, especially midwives, can provide lactation management to postpartum mothers by doing oxytocin massage.

Keywords: Oxytocin massage, Breast milk expenditure.

INTRODUCTION

In order to reduce infant morbidity and mortality, UNICEF and WHO recommend that babies should only be breastfed for at least 6 months, and continued breastfeeding until the baby is two years old. So that mothers can maintain exclusive breastfeeding for 6 months. Based on Government Regulation Number 33 of 2012 concerning Exclusive Breastfeeding, breast milk is given to babies from birth for six months, without adding or replacing it with other foods or drinks.

In Indonesia, the area with the highest percentage of babies who receive exclusive breastfeeding is in the NTB area in 2022 as much as 79.69% then the lowest percentage in Indonesia in 2022 is in the Gorontalo area of 53.60% and the percentage of babies less than 6 months old who are breastfed Lampung Province exclusive breastfeeding in 2020 was 72.36%, in 2021 it was 74.93% and it will increase in 2022 as much as 76.76%.

The magnitude of the benefits of breastfeeding is not matched by an increase in breastfeeding behavior so that the baby does not get breast milk properly. Several factors are suspected to be the cause of babies not getting breast milk properly, one of which is the mother's knowledge factor. Mother's reluctance to breastfeed because of pain during breastfeeding, fatigue during breastfeeding, and mother's concern about breast changes after breastfeeding. Socio-cultural factors, lack of family and environmental support in the breastfeeding process also greatly affect the breastfeeding process. The lack of health education regarding factors that can increase milk production also recognizes the knowledge of primiparous mothers which can cause a lack of milk volume.

While the beginning of the introduction of babies to ASI is by doing IMD (Early Breastfeeding Initiation). IMD is an important step to make it easier for babies to start the breastfeeding process. Early initiation of breastfeeding will also be very helpful in the continuation of breastfeeding and the duration of breastfeeding. However, the IMD rate in Indonesia is still relatively low. According to the 2018 Riskesdas data and the 2017 Indonesian Nursing Diagnosis Standards (IDHS), among children younger than two years old, only 57% of babies get breast milk one hour after birth. Meanwhile, 61% were immediately placed on the mother's chest and there was skin contact with the mother, as much as 60%.

According to basic health research data (RISKESDAS) 2021, 52.5% or only half of the 2.3 million babies aged less than 6 months are receiving exclusive breastfeeding in Indonesia, or a decrease of 12% from the 2019 rate. The early breastfeeding initiation rate (IMD)) also decreased from 58.2% in 2019 to 48.6% in 2021.

Breast milk expenditure can be influenced by two factors, namely production and expenditure. Milk production is influenced by the hormone prolactin while expenditure is influenced by the hormone oxytocin. Techniques for increasing breast milk include breast care or breast care, breast exercise, breast massage and oxytocin massage. The effectiveness of oxytocin massage can be seen from Astria dian Setyorini's research in 2014, it is known that there is a significant difference between the marmet technique and the combination of marmet technique - oxytocin massage so researchers want to know about oxytocin massage.

Through oxytocin massage, the oxytocin hormone will come out through stimulation to the nipples through sucking the baby's mouth or through massage of the baby's mother's spine. By doing massage on the spine the mother will feel calm, relaxed, increase her pain threshold and love her baby. So that the oxytocin hormone comes out and the milk comes out quickly (Wulandari, 2018).

Through massage or stimulation of the spine, neurotransmitters will stimulate the medulla oblongata to be sent directly to the hypothalamus in the posterior hypovise to release oxytocin, causing the breasts to secrete milk. With massage in the spinal area, this will also relax tension and relieve stress and so the hormone oxytocin will come out. and will help expel breast milk. assisted by the baby's sucking on the nipple immediately after the baby is born with a normal baby.

Not all post partum mothers immediately express breast milk because breastfeeding is a very complex interaction between mechanical, nervous and various kinds of hormones that affect the release of oxytocin. If it widens or becomes soft, oxytocin is reflexively released by the hypovise which plays a

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role in squeezing milk from the elveoli (Soetjiningsih 2014).

The results of a preliminary study conducted at RSUD Dr. H. Abdul Moeloek Lampung Province on March 15 2023. Babies who were born normally were carried out for IMD (Early Breastfeeding Initiation) but there were several babies who were not given IMD because of risk factors for babies such as babies who were asphyxiated. Several babies were given to their mothers after the mother recovered and entered the obstetric care room or the postpartum room at RSUD Dr. H. Abdul Moeloek, Lampung Province, Bandar Lampung, after a few hours the baby and his mother were crying and 7-10 mothers were confused when their baby was crying, while the milk that came out was not smooth. They had asked about how to get a lot of breast milk out. Meanwhile, the post partum mothers had the desire to exclusively breastfeed their babies. Information obtained from service workers said that about 50% of mothers complained that their milk production was not smooth and milk production was only small. Mothers did not know about oxytocin massage, so there were no postpartum mothers who stimulated their milk release with oxytocin massage but mothers overcame the lack of milk production by increasing consumption of green vegetables.

Based on the description above, the study wanted to prove whether there was an effect of oxytocin massage on breastfeeding in post partum mothers at RSUD Dr. H. Abdul Moeloek Lampung Province in 2023.

RESEARCH METHODS

This type of research is quantitative, using a quasi-experimental design using a posttest only with control group design. The population of this study were all postpartum mothers at RSUD Dr. H. Abdul Moeloek Lampung Province, with a total sample of 32 people, using accidental sampling. The independent variable in this study was oxytocin massage, and the dependent variable was breast milk expenditure.

This study uses primary data obtained through observation of subjects according to predetermined inclusion criteria. Doing informed consent to the research subjects to become research respondents, then a pre-test assessment was carried out, namely an assessment before the massage was carried out to assess whether colostrum had come out or had not come out. After that, respondents who met the inclusion criteria were given an oxytocin massage at 6 hours post partum and 12 hours post partum and then reassessed after 24 hour post partum. Data processing includes editing, tabulating, processing, and cleaning. Data analysis using univariate and bivariate methods using the independent T test.

RESEARCH RESULT
Univariate analysis

Milk output Based on table 1 above, it can be seen that the average milk expenditure in the group treated with oxytocin massage was 7.338cc, with a minimum amount of 5.5cc and a maximum value of 9.5cc.

Table 1
The Average Expenditure of Breast Milk in Post Partum Mothers Who Are Given Oxytocin Massage Treatment

Variable	n	Mean	Median	SD	Min-Max
Breast milk expenditure	32	7,338	7,5	1,179	5,5-9,5

Table 2
Average Expenditure of Breast Milk in Post Partum Mothers Who Were Not Given Oxytocin Massage Treatment

Variable	n	Mean	Median	SD	Min-Max
Breast milk expenditure	32	4,956	5,0	0,811	3,5-6,8

Based on table 2 above, it can be seen that the average milk production in the group that was not treated with oxytocin massage was 4.956cc, with a minimum amount of 3.5cc and a maximum value of 6.8cc.

Bivariate analysis

Based on table 3 above, it can be seen that the expenditure of milk in the treatment group (which was given oxytocin massage) was more than the expenditure of milk in the control group (which was not given oxytocin massage) with an average

difference of 2.381cc. The results of the t-test (independent sample t-test) obtained a significance value of p-value = 0.000 (p-value < α (0.05)), so it can be concluded that there is an effect of oxytocin massage on breastfeeding in post partum mothers.

Table 3
Effect of Oxytocin Massage on Milk Expenditure in Post Partum Mothers

Variable	N	Mean	*Mean Different*	SD	SE	*P-Value*
Milk Expenditure Treatment Group	16	7,338		1,179	0,295	
			2,381			0,000
Expenditure of Milk Control Group	16	4,956		0,811	0,203	

DISCUSSION

Based on the results of the study, it was found that the average milk production in the group that was treated with oxytocin massage was 7.338cc, with a minimum amount of 5.5cc and a maximum value of 9.5cc.

The results of this study are in accordance with the theory put forward by Roesli, (2015), that Mother's Milk (ASI) is the main source of nutrition from a mother to a baby which is secreted by both sides of the mother's breast glands in the form of natural food or the best nutritious and high-energy milk which is easy to digest and contains a balanced and perfect nutritional composition for the growth and development of babies at all times, ready to be served at room temperature and free from contamination. Apart from that, according to Mintaningtyas (2022), one of the efforts to increase milk production is by oxytocin massage. Oxytocin massage is one of the non-pharmacological therapies performed to facilitate milk production. Oxytocin massage is massage along both sides of the spine. This massage is done to stimulate the oxytocin reflex or the milk ejection reflex.

The results of this study are also in line with research conducted by Rofika (2020), concerning the effect of oxytocin massage on the smooth production of breast milk in breastfeeding mothers in Tambakromo Village, Kec. Tambakromo District. Starch, the results obtained in the post-test of the treatment group obtained 8.47 cc of milk output.

According to the researchers, the results of the study showed that the average milk expenditure in the group that was given oxytocin massage was 7.338cc where milk production was more when compared to the group that was not given oxytocin massage. where oxytocin massage will provide comfort to the postpartum mother then stimulate the oxytocin reflex, this will affect the increase in the amount of breast milk/colostrum produced by the postpartum mother. In addition, based on the results of the study, it was obtained that the minimum value

of milk production in the group given oxytocin massage was 5.5 cc. This could be caused by several factors, including maternal nutritional factors since pregnancy. Good nutrition during pregnancy can affect the functions of the reproductive organs and the lactation process. Then the pain after giving birth can also affect colostrum expenditure because pain can cause discomfort so even though an oxytocin massage has been given, the results are not optimal.

Based on the results of the study, it was also found that the average milk production in the group that was not treated with oxytocin massage was 4.956cc, with a minimum amount of 3.5cc and a maximum value of 6.8cc.

The results of this study are in accordance with the theory put forward by Saleha (2014), that breast milk is an ideal source of nutrition with a balanced composition and adapted to the needs of the baby's growth. According to Roesli, (2015), the first liquid that a baby gets from his mother is called colostrum, where the milk contains a mixture richer in protein, minerals, and antibodies than mature breast milk. Breast milk starts around day 3 or day 4. Colostrum is a viscous liquid with a thick, sticky and yellowish color. Colostrum volume between 5-7 ml/first 24 hours.

The results of this study are also in line with research conducted by Rofika (2020), regarding the effect of oxytocin massage on the smooth production of breast milk in breastfeeding mothers in Tambakromo Village, Kec. Tambakromo District. Starch, the results obtained in the post-test control group (no oxytocin massage) produced less milk than the control group, namely 6.75 cc.

According to the researchers, in the control group milk expenditure was still quite low when compared to the treatment group. This was because no treatment was given to this group, so the amount of colostrum produced was the result without any intervention being given to the respondents. Based on the results of the study, it was found that the least

amount of colostrum excreted in the control group was 3.5 cc. This can be caused by many factors, one of which is not doing oxytocin massage so that the mother does not feel relaxed after giving birth which causes the oxytocin reflex to not be aroused which will help expel breast milk/colostrum. Whereas in the control group there was sufficient milk production at the maximum value of 6.8cc. This can be influenced by several factors such as nutritional intake during pregnancy. Good nutritional intake will help all organs work properly including in producing and removing breast milk/colostrum. In addition, multiparous mothers tend to produce more milk on the first postpartum day than primiparous mothers.

Based on the results of the study, it was found that there was an effect of oxytocin massage on milk expenditure in post partum mothers at Dr. H. Abdul Moeloek Lampung Province in 2023 (p-value = 0.000).

The results of this study are in accordance with the theory put forward by Mintaningtyas (2022), that oxytocin massage is carried out along the spine where at this location the mother often feels tense. Along the spine there are acupressure points to facilitate the lactation process and expedite the flow of milk and the nerves around the breasts that are connected along the spine. Oxytocin massage is performed on postpartum mothers as a stimulus that will cause an increase in prolactin and oxytocin levels, especially in the early days of breastfeeding, which will ultimately affect the production and release of breast milk. Oxytocin makes the myoepithelial cells around the alveoli contract, so that the milk that has accumulated in the alveoli can flow and fill all the milk ducts smoothly. Oxytocin massage is one of the stimulations to help the secretion of the hormones prolactin and oxytocin, the massage that is carried out has the effect of reducing the hormone cortisone and increasing the secretion of oxytocin and prolactin so that the process of flowing milk will not be hampered.

The results of this study are also in line with research conducted by Yiyin (2018), regarding the effect of oxytocin massage on breastfeeding in post partum mothers at RSIA Aisyiyah Samarinda in 2018, where there was a significant effect of oxytocin massage between breastfeeding in post partum mothers. the Wilcoxon test, namely the Z obtained is -5.070 with a sig value of 0.000> (0.05). In addition, the results of Intan's research (2021) concerning the effect of oxytocin massage on lactogenesis II milk output in multiparous post partum mothers at the Anny Rahardjo Main Clinic in 2021, found that there was a significant effect on giving oxytocin massage

on post partum mother's milk output.(p) -value 0.000).

According to the researchers, there was an effect of oxytocin massage on breastfeeding in post partum mothers, where the milk output in post partum mothers who were given oxytocin massage treatment would be more numerous than those who were not given oxytocin massage treatment because mothers who were given oxytocin massage treatment would be more Facilitate milk production, by doing oxytocin massage on the mother's back will provide comfort to the mother so that physiologically it will stimulate the oxytocin reflex or let down reflex to produce/secrete the hormone oxytocin into the blood. This oxytocin causes the myopithelium cells around the alveoli to contract and makes milk flow from the alveoli to the ductuli to the sinuses and nipples and then sucked by the baby. The smoother the discharge of breast milk, the more milk / colostrum will be produced.

Based on the results of the study, it was found that the maximum value of breastfeeding was 9.5 cc which could be due to the age of the mother who was not at risk and also multiparous parity. In addition, based on the results of the interview, it turned out that the respondent performed breast care during the third trimester of pregnancy until the time of delivery. In addition, the results of the study also obtained a minimum value of 5.5 cc, this could be due to the young age of the respondents and primiparas, where primiparas tend to spend less milk on the first day than multiparas.

CONCLUSION

In this study, research was carried out so that it could be concluded that the average milk expenditure in the group that was given oxytocin massage was 7.338cc. In addition, the average milk production in the group that was not treated with oxytocin massage was 4.956 cc. Statistical test results obtained that there was an effect of oxytocin massage on breastfeeding in post partum mothers at Dr. H. Abdul Moeloek Lampung Province in 2023 (p-value = 0.000).

SUGGESTION

It is hoped that midwives can provide health education about oxytocin massage with demonstration methods for postpartum mothers to increase the knowledge of post partum mothers so that mothers can do oxytocin massage and expedite the release of breast milk/colostrum. Then it is hoped that medical personnel, especially midwives, can apply oxytocin massage in the implementation of midwifery care for postpartum mothers in accordance

with the applicable SOP (Standard Operating Procedure). In addition, it is hoped that the hospital management can provide training to midwives on how to perform oxytocin massage and also socialize the SOP for oxytocin massage to all midwives at RSUD Dr. H. Abdul Moeloek Lampung Province.

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Lia Tri Aida Saputri, Nurmalia Ermi

THE RELATIONSHIP OF EARLY BREASTFEEDING INITIATION AND EXCLUSIVE ASI ON THE INCIDENT OF STUNTING TODDLER AGES (6-59 MONTHS) IN OGAN ILIR DISTRICT

Lia Tri Aida Saputri[1], Nurmalia Ermi[2]

[1][2]Study Program Public Health Science Faculty Of Public Health Sriwijaya University
Corresponding Email: nurmalia_ermi@fkm.unsri.ac.id

ABSTRAK : HUBUNGAN INISIASI MENYUSUI DINI (IMD) DAN ASI EKSKLUSIF TERHADAP KEJADIAN STUNTING BALITA USIA (6-59 BULAN) DI KABUPATEN OGAN ILIR

Latar Belakang: Berdasarkan data dari hasil Studi Status Gizi Indonesia (SSGI, 2022), prevalensi kejadian balita yang mengalami stunting pada tahun 2022 adalah 21.6%, dimana hasil tersebut telah mengalami penurunan sebesar 2.8% dari tahun sebelumnya sebesar 24,4%. Sementara itu, target penurunan stunting yang harus dicapai pada tahun 2024 sebesar 14%.

Tujuan: Untuk mengetahui Hubungan antara Inisiasi Menyusu Dini (IMD) dan ASI Eksklusif terhadap kejadian stunting pada balita usia 6-59 bulan di Kabupaten Ogan Ilir.

Metode: Penelitian kuantitatif dengan menggunakan pendekatan *Case Control.* Populasi pada penelitian ini adalah semua Ibu yang memiliki balita usia 6-59 bulan di Kabupaten Ogan Ilir. Jumlah sampel yaitu 67 kasus dan 134 kontrol perbandingan 1:2, dengan teknik pengambilan sampel yaitu *Purposive Sampling.*

Hasil: Berdasarkan hasil uji analisis antara Inisiasi Menyusu Dini (*p-value*=0,695,OR=0.752), ASI Eksklusif (*p-value*=0,647>0,05, OR=0.829), Pendidikan (*p-value*=0,878>0,05, OR=1.099), Pengetahuan (*p-value*=1.000>0,05, OR=1.031), dan Pendapatan (*p-value*=0,719>0,05, OR=1.294). Hal ini menunjukkan bahwa tidak ada hubungan antara Inisiasi Menyusu Dini, ASI Eksklusif, Pendidikan, Pengetahuan, dan Pendapatan dengan kejadian stunting di Kabupaten Ogan Ilir.

Kesimpulan: Tidak ada hubungan antara Inisiasi Menyusu Dini, ASI Eksklusif, Pendidikan, Pengetahuan, dan Pendapatan terhadap kejadian stunting pada balita usia 6-59 bulan di Kabupaten Ogan Ilir.

Saran: Tetap melaksanakan intervensi spesifik dan sensitif, melibatkan beberapa pihak seperti dinas kesehatan, dinas lingkungan hidup, serta melaksanakan monitoring dan evaluasi secara berkelanjutan.

Kata kunci: ASI Eksklusif, Inisiasi Menyusui Dini, dan Stunting.

ABSTRACT

Background: Based on data from the Indonesian Nurtrition Status Study (SSGI 2022), the prevalence of stunting among under-fives in 2022 was 21.6%, which has decreased by 2.8% from previous year of 24.4%. Meanwhile, the stunting reduction target that must be achieved by 2024 is 14%.

Objective: To determine that relationship between Early Breastfeeding Initiation (IMD) aand Exclusive Breastfeeding on the incidence of stunting in toddlers aged 6-59 months in Ogan Ilir Regency.

Methods: Quantitative research using a Case Control approach. The population in this study were all mothers who had toddlers aged 6-59 months in Ogan Ilir Regency. The number of samples was 67 cases and 134 controls in a ratio of 1:2, with the sampling technique being Purposive Sampling.

Result: based on the results of the analysis test between Early Breastfeeding Initiation (p-value=0.695>0.05, OR=752), Exclusive Breastfeeding (p-value=0.647>0.05, OR=0.829), Education (p-value=0.878>0.05, OR=1.099), Knowledge (p-value=1.000>0.05, OR=1.031), and Income (p-value=0.719>0.05, OR=1.294). This shows that there is no association between Early Breasfeeding Initiation, Exclusive Breasfeeding, Education, Knowledge, and Income with the incidence of stunting in Ogan Ilir District.

Conclusion: There is no association between Early Breasfeeding Initiation, Exclusive Breasfeeding, Education, Knowledge, and Income on the incidence of stunting among children under 6-59 months of age in Ogan Ilir Regency.

Suggestion: Continue to implement specific and sensitive interventions, involve several parties such as the health department, the environmental department, and carry out continuous monitoring and evaluation.

Keywords: Exclusive Breastfeeding, Early Breastfeeding Initiation, and Stunting.

INTRODUCTION

Stunting is a disorder characterized by impaired growth of children under the age of 5, mainly due to chronic malnutrition. This condition is most prevalent during the first 1,000 days of life (HPK), from fetal development until the child reaches 24 months of age. Stunting can impair the cognitive and physical development of children's brains, increasing their vulnerability to chronic diseases in adulthood (Adriani et al., 2022).

Stunting as defined by the World Health Organization (WHO) is a condition of stunted child development due to malnutrition and frequent infections. A PB/U or TB/U index z score of less than -2 SD (standard deviation) indicates that the length or height is below the specified standard. In addition, inadequate psychosocial stimulation is also a contributing factor. Therefore, factors such as environmental hygiene, maternal nutritional status, diet, and the prevalence of childhood diseases are significant contributors to the occurrence of stunting in children (Sendra & Indriani, 2022).

For children under five years of age, Indonesia had the second highest stunting rate in Southeast Asia in 2020, at 31.8% (ADB, 2021). This is higher than the 20% threshold set by the World Health Organization. Based on the statistics of the Study on the Status of Nutrition in Indonesia (SSGI, 2022), the proportion of under-fives suffering from stunting in 2022 is 21.6%. This figure shows a decrease of 2.8% compared to the previous year of 24.4%. The stunting reduction target that must be achieved by 2024 is 14%. To reduce the prevalence of stunting in Indonesia, the government has implemented Presidential Regulation Number 72 of 2021. This regulation aims to accelerate stunting reduction through a holistic, interactive and quality approach. It emphasizes coordination, synergy, and synchronization between stakeholders, in line with the National Strategy to Accelerate Stunting Reduction. The main goal is to achieve the sustainable development goals by 2030 (Perpres, 2021).

In 2022, based on SSGI (2022), the incidence of stunting in children under five in South Sumatra was 18.6%. South Sumatra itself has 13 district governments and four city governments, where one of the districts is Ogan Ilir Regency. The prevalence of stunting in Ogan Ilir Regency is 24.9%, which is the second highest prevalence of stunting in children under five in South Sumatra. (Kementerian Kesehatan Republik Indonesia, 2022).

According to the WHO, improper implementation of IMD and inadequate availability of breast milk contribute to stunting. Breast milk, also known as human milk or lactation, is a biological fluid that results from the exocrine secretion of the mammary glands in the mother's breast. Infants aged 0-6 months should consume only breast milk, without any addition or substitution with other foods or drinks (Hamzah, 2022). The initiation of breastfeeding in infancy is very important to meet the nutritional needs of the child, which includes important components such as antibody hormones, immunological factors, and antioxidants (Chairunnisa et al., 2020).

Based on Kementerian Kesehatan Republik Indonesia (2021), According to the Ministry of Health of the Republic of Indonesia (2021), the proportion of toddlers who received exclusive breastfeeding in Indonesia in 2020 was 66.1%. However, this figure decreased by 9.2% in 2021 to 56.9%. Meanwhile, exclusive breastfeeding coverage in South Sumatra is 45.4%. Meanwhile, in Ogan Ilir Regency, the achievement of exclusive breastfeeding reached 59.1% (Ilir, 2021). he value is still far from the national target of exclusive breastfeeding rate of 80%.

For breastfeeding to be successful, it is important to initiate breastfeeding as soon as possible after delivery. Early initiation of breastfeeding (IMD) refers to the practice of initiating breastfeeding immediately after delivery through direct skin-to-skin contact between the mother and her baby, lasting a minimum of one hour. IMD offers several benefits, including the potential to reduce newborn mortality, improve respiratory function, stabilize the baby's heart rate, increase the baby's immune system, support the continuation of exclusive breastfeeding and prolonged breastfeeding (Kemenkes RI, 2022).

The incidence of infectious and parasitic diseases (IMD) in South Sumatra is 84% according to the Kementrian Kesehatan RI pada Tahun 2022. According to the Central Bureau of Statistics in 2022 the coverage of Early Breastfeeding Initiation (IMD) in Ogan Ilir Regency was 22.91%. This shows that the goal of providing IMD has not been achieved. Research findings Salamah dan Prasetya (2019), showed a strong correlation between successful IMD and exclusive breastfeeding, with an odds ratio (OR) of 5.907. Thus, compared to mothers who did not perform IMD, mothers who performed IMD were five times more likely to provide exclusive breastfeeding.

In an effort to reduce infant mortality and morbidity, UNICEF and WHO recommend exclusive breastfeeding for at least six months. Subsequent introduction of solid foods occurs after the child reaches 6 months of age, but breastfeeding continues until the child reaches two years of age. Exclusive breastfeeding is essential for optimal growth, development and well-being of the child. In

addition to reducing the likelihood of disease later in life, breast milk can also boost a child's immune system. Consistently providing exclusive breastfeeding to children will improve the baby's immune system, reducing the risk of contracting certain diseases (Upik *et al*., 2023).

Breast milk consists of about 88% water. Water plays an important role in regulating body temperature, as babies lose 25% of their body heat through water removal through the kidneys and skin. The main energy sources in breast milk are carbohydrates and lipids, while carbohydrates are mostly represented by lactose. In addition, breast milk contains glucose, galactose and glucosamine, which have significant contributions to brain development and suppress the growth of pathogenic bacteria. 10% of the total comes from protein, specifically casein, serum albumin and other glycoproteins. In addition, breast milk is rich in amino acids that play an important role in promoting brain development, supporting retinal formation, and facilitating bilirubin conjugation (Susu & Asi, 2020)

Pramulya *et al.* 2021 conducted a study that showed that most toddlers who were exclusively breastfed did not suffer from stunting, namely 33 toddlers (84%). Conversely, toddlers who are not exclusively breastfed, the majority experience stunting, as many as 38 toddlers are affected. The percentage was 71.7%. Lestari & Dwihestie (2020), showed that 37.1% of the 26 children studied were stunted, a higher percentage than toddlers who were not stunted and exclusively breastfed, which was 34.3%.

Children who are not exclusively breastfed are more likely to experience malnutrition and stunted growth due to the absence of essential elements contained in breast milk. Researchers want to know the relationship between the implementation of IMD and Exclusive Breastfeeding with the occurrence of stunting in children aged 6-59 months in Ogan Ilir District, South Sumatra, in 2023.

RESEARCH METHODS

This study used a quantitative methodology based on a case-control design. The participants were mothers who lived in Ogan Ilir District and had children aged 6-59 months. There were 67 cases and 134 controls in the sample, with a ratio of 1:2. Purposive sampling is a method for the sampling process. The study used a questionnaire instrument that had undergone rigorous testing to ensure validity and reliability. Data collection was conducted over seven days. Researchers administered questionnaires and conducted face-to-face interviews regarding exclusive breastfeeding and early breastfeeding initiation. Chi-Square test was used for data analysis.

RESEARCH RESULTS
Univariate Analysis

Based on table 1, it is known that of the 201 respondents, the average age is 32 years old with the oldest age being 45 years old and the youngest age being 18 years old. It is known that the average monthly parental income is IDR 2,531,069 with the highest income is IDR 25,000,000 and the lowest income is IDR 2,000,000. It is known that the average PB/TB is 81 cm with the maximum PB/TB is 101 cm and the minimum PB/TB is 47 cm.

Table 1
Frequency Distribution Based on Respondent Characteristics

Variables	Max Value	Min Value	Average
Age	45 Tahun	18 Tahun	31.52
Revenue	25.000.000	2.000.000	2.531.069
PB/TB	101 cm	47 cm	81 cm

Table 2
Frequency distribution based on respondent characteristics

Variables	Frequency	Percentage (%)
Education		
<SMA	123	61.2
≥SMA	78	38.8
Jobs		
Housewife	175	87.1
Working Mom	26	12.9

Revenue		
<Rp3.404.177	173	86.1
≥Rp3.404.177	28	13.9
Gender		
Male	102	50.7
Female	99	49.3
Stunting		
Stunting	67	33.3
Normal	134	66.7
Early Breastfeeding Initiation		
No IMD	180	89.6
IMD	21	10.4
Exclusive Breastfeeding		
Not exclusively breastfed	28	37.8
Exclusive breastfeeding	46	62.2

Based on table 2, it is known that out of 201 respondents, the majority of respondents have an education <SMA as many as 123 respondents (61.2%). It is known that 175 respondents (87.1%) work as housewives. It is known that 173 respondents (86.1%) have an income of <Rp3.404.177. it is known that 102 (50.7%) respondents are male and 99 (49.3%) are female. It is known that there are 134 toddlers who do not experience stunting (33.3%). It is known that most toddlers do not early breastfeeding Initiation as many as 180 (89.6%). And it is known that 46 toddlers are given exclusive breastfeeding (37,8%).

Bivariate Analysis

Table 3
Relationship between IMD, exclusive breastfeeding, education, knowledge, and income on the incidence of stunting in toddlers aged 6-59 months in Ogan Ilir Regency in 2023

Variables	Incidence of Stunting						OR	P-value
	Stunting		Normal		Total			
	f	%	f	%	f	%		
IMD								
No IMD	58	86.6	120	89.6	178	88.6		
IMD	9	13.4	14	10.4	23	11.4	0.752	0.695
Total	67	100	100	100	201	100		
Exclusive breastfeeding								
Not exclusively breastfed	25	37.3	56	41.8	81	40.3	0.829	0.647
Exclusive breastfeeding	42	62.7	78	58.2	120	59.7		
Education								
<SMA	42	62.7	81	60.4	123	61.2	1.099	0.878
≥SMA	25	37.3	53	39.6	78	38.8		
Knowledge								
Low	36	53.7	73	54.5	109	54.2	1.031	1.000
High	31	46.3	61	45.5	92	45.8		
Revenue								
<Rp3.404.177	59	88.1	114	85.1	173	86.1	1.294	0.719
≥Rp3.404.177	8	11.9	20	14.9	28	13.9		

Table 3 shows that out of a total of 134 control respondents and 67 case respondents, 86.6% of children whose parents did not apply IMD experienced stunting, while 10.4% of children whose parents applied IMD experienced normal development. Exclusive breastfeeding variables by not providing exclusive breastfeeding in toddlers with stunting cases 25 respondents (37.3%) and toddlers who are given exclusive breastfeeding do not experience stunting 78 respondents (58.2%).

Mother's education variable with mother's education <SMA who had stunted toddlers 42 respondents (62.7%) and mother's education ≥SMA who did not have stunted toddlers 53 respondents (39.6%), and knowledge variables with low knowledge who had stunted toddlers 36 respondents (53.7%) and high knowledge with those who did not have stunted toddlers 61 (45.5%), and parental income variables with income <IDR 3,404,177 who had stunted toddlers 59 respondents (88.1%) and income IDR 3,404,177 who did not have stunted toddlers 20 respondents (14.9%).

The p-value on the variables of Early Breastfeeding Initiation (0.695), Exclusive Breastfeeding (0.647), Education (0.878), Knowledge (0.970), and Income (0.773) based on Chi-Square statistical test. Early breastfeeding initiation, exclusive breastfeeding, education, knowledge, and income did not have a significant relationship with the incidence of stunting in children aged 6-59 months in Ogan Ilir District (p-value greater than 0.05).

DISCUSSION
The relationship between IMD and the incidence of stunting

Research in Ogan Ilir District showed that 86.6% of children under five did not receive timely initiation of breastfeeding, resulting in stunting. Of the children who were given IMD, 13.4% experienced stunting. The p-value of 0.695 shows that there is no significant relationship between IMD and the incidence of stunting in toddlers aged 6-59 months in Ogan Ilir Regency. Research conducted in the Gambus 1 Health Center Working Area on toddlers aged 24-59 months did not reveal any relationship between IMD history and the occurrence of stunting (Mentari & Artikel, 2020). This relationship is not statistically significant, because the p-value of 0.494 is greater than 0.05.

Sunartiningsih et al (2021), said there was a significant relationship between early breastfeeding initiation and the occurrence of stunting in toddlers aged 12-24 months, with a p-value of 0.000 <0.05. Government Regulation of the Republic of Indonesia Number 33 of 2012 mandates the implementation of early breastfeeding initiation. Based on this regulation, mothers are required to breastfeed their newborn babies for at least one hour (Government Regulation of the Republic of Indonesia Number 33 of 2012 concerning Exclusive Breastfeeding, 2012). Consistent with research Jebena dan Tenagashaw, (2022) Exclusive breastfeeding was more common among mothers who started breastfeeding within the first hour after delivery (odds ratio: 1.94) compared to mothers who did not breastfeed.

Reaching the nipple facilitates baby's access to colostrum. Colostrum, a nutrient-rich substance, is essential for newborns as it contains the protein immunoglobulin A, which provides protection for babies up to 6 months of age. Babies need essential minerals, such as calcium, potassium and sodium which are important for bone development. Therefore, infants who undergo IMD have many benefits over infants who do not undergo IMD, as it can reduce the likelihood of stunting in toddlers (Hanifa et al., 2023).

The relationship between exclusive breastfeeding and the incidence of stunting

Researchers in Ogan Ilir District found that 37.3% of toddlers were stunted because they were not exclusively breastfed. 62.7% of children under five who were exclusively breastfed were stunted. In Ogan Ilir District, children under 6-59 months showed no statistically significant correlation between stunting and exclusive breastfeeding (p-value = 0.647). This study found no correlation between the incidence of stunting in toddlers in the Buntu Batu Health Center Working Area of Enrekang Regency and whether or not exclusive breastfeeding was given (Syam et al., 2019).

Sjmj et al., (2020) found a correlation between exclusive breastfeeding and stunting in toddlers. Compared to toddlers who are exclusively breastfed, the risk of toddlers who are not breastfed is 0.102 times higher. WHO and UNICEF recommend exclusive breastfeeding for infants until the baby is six months old, because breast milk contains many complete and balanced nutrients that are very sufficient to meet the nutritional needs of infants. Exclusive breastfeeding contains special proteins that increase the baby's immunity from infections such as bacteria, viruses, and parasites (Rina Hizriyani & Toto Santi Aji, 2021).

Relationship between education level and the incidence of stunting

Research in Ogan Ilir District revealed that 62.7% of mothers with education levels below senior high school, who have toddlers suffer from stunting. As many as 37.3% of mothers with high school education and above and toddlers aged 6-59 months were stunted. The p-value of 0.878 indicates that the relationship between mother's education level and the incidence of stunting in this age group in Ogan Ilir Regency is not statistically significant. Research conducted by Rizcewaty et al. (2022), there was no significant relationship between the degree of

education and the occurrence of stunting in the Working Area of the Kupang Island Health Center, Kapuas Regency. This study found a p value of 0.757, more than 0.05.

Husnaniyah et al. (2020), found a significant relationship between maternal education and the prevalence of stunting (p<0.05) in the Kandanghaur Indramayu Health Center Working Area. This study reported a p value of 0.005, which indicates strong statistical significance. Mother's education level was ascertained based on the last formal school completion. Utami RA et al. (2019) and Shodikin et al. (2023) found a strong correlation between mother's education and children's nutritional status. This relationship is due to the direct involvement of mothers in caring for children, especially in terms of food preparation and feeding. A mother's advanced level of education has a favorable influence on the child's growth and development. Therefore, mothers' awareness of the importance of maintaining health, including ensuring good nutrition for the family, providing nutritional care to children, and encouraging healthy lifestyles is increasing.

Relationship between knowledge level and the incidence of stunting

Research in Ogan Ilir District revealed that 53.7% of mothers who had limited knowledge about child growth and development had stunted toddlers. As many as 46.3% of mothers with a high level of knowledge and toddlers experience stunting. In Ogan Ilir District, the p-value of 1,000 indicates that the relationship between maternal knowledge and the incidence of stunting in children aged 6-59 months is not statistically significant. When looking at the correlation between stunting rates and mothers' knowledge of the condition, Abd Arafat et al. (2022) did not find a statistically significant relationship (p >0,05). Specifically, the study found a p-value of 0.367 at Sangurara Health Center, Palu City.

In 2020, researchers Sakit et al. (2022), examined the Sidrap District Health Center Working Area to determine the prevalence of stunting in children aged 12-59 months and the relationship between maternal knowledge and this condition. Munandar, in research Aziza et al. (2023) ound that the nutritional intake of toddlers is influenced by their mothers. The mother's level of knowledge plays an important role in determining food consumption patterns in toddlers, because it affects the selection of food types both in terms of quality and quantity. Mothers who have an adequate understanding of nutrition will prioritize the nutritional needs of their children to ensure healthy growth and development.

Relationship between income level and the incidence of stunting

Research in Ogan Ilir District revealed that 88.1% of parents with monthly incomes below Rp. 3,404,177 and toddlers were stunted. A total of 11.9% of parents with an income of at least IDR 3,404,177 and under-fives were stunted. In Ogan Ilir District, stunting children aged 6 to 59 months was not associated with parental income leve (p=0,719). Research conducted in the Gaya Baru Working Area of Bone Regency showed no association between income and the prevalence of stunting (Sudarm et al., (2022).

R.M Sari et al (2020) found the incidence of stunting in toddlers correlated with the income level of the parents. The study showed a significant p value of 0.004, supporting this relationship. The study was conducted in the Seginim Health Center Working Area, South Bengkulu Regency. The capacity of a family to provide adequate nutrition for their children depends on their financial status. A person's wealthy financial position can influence decision-making and the purchase of nutritious and diverse foods. However, when the economic situation of parents is low, it can have an impact on the occurrence of stunting in children due to not fulfilling adequate nutritional needs (Budiman et al., 2023).

CONCLUSIONS

In children in Ogan Ilir District aged 6 to 59 months, the study found no association between stunting and factors such as exclusive breastfeeding, early breastfeeding initiation, education, knowledge, or income.

Factors influencing the successful implementation of IMD, exclusive breastfeeding, education, knowledge, and income are the mother's knowledge and understanding of the importance of IMD obtained through counseling, pregnant women's classes, and counseling. Thus, mothers are motivated to implement IMD. Family and environmental support in the form of physical, emotional, and financial support. Maternal health conditions where mothers who do not experience complications of pregnancy and childbirth will be easier to breastfeed their children and carry out IMD. Maternal behavior that supports exclusive breastfeeding. Availability of adequate information and education obtained through health workers and mass media. Mother's ability to absorb good information. Mother's motivation to learn is high to seek and absorb information. And a high level of education affects parents' knowledge and income, parents will have good skills and knowledge, making

it easier to get high income and knowledge in meeting children's nutritional needs.

SUGGESTION

For sensitive interventions, this approach includes increasing the availability of uncontaminated water and proper sanitation, improving the accessibility and standards of nutrition and health services, increasing awareness, dedication, and nutrition care practices among mothers and children, and expanding nutrition care practices among mothers and children. For sensitive interventions, this approach includes increasing the availability of uncontaminated water and proper sanitation, improving the accessibility and standard of nutrition and health services, increasing awareness, dedication and nutritional care practices among mothers and children, and expanding access to nutritious foods.

Involving several related parties such as the South Sumatra Provincial Health Office, the Ogan Ilir District Health Office, and health centers as the main parties in implementing the intervention. The Environmental Agency plays a role in improving environmental quality, such as reducing water pollution in the Ogan Ilir Regency area. Furthermore, carrying out ongoing monitoring and evaluation of food and infections that can increase the incidence of stunting. To better understand the causes of stunting in children in Ogan Ilir District, additional research is needed.

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Rossi Septina, Nur Adjizah, Lilik Susilowati, Ella Nurlelawati, Rosmiati, Khairil Walid Nasution

THE RELATIONSHIP OF THERAPEUTIC COMMUNICATION WITH THE LEVEL OF ANXIETY OF PRIMIGRAVIDA MOTHERS IN FACING LABOR

Rossi Septina[1], Nur Adjizah[2], Lilik Susilowati[3], Ella Nurlelawati[4], Rosmiati[5], Khairil Walid Nasution[6]

[1,2,3,4,5,6]STIKES Bhakti Pertiwi Indonesia
Corresponding email : [1,2] rossiseptina19@gmail.com

ABSTRAK : HUBUNGAN KOMUNIKASI TERAPEUTIK DENGAN TINGKAT KECEMASAN IBU PRIMIGRAVIDA DALAM MENGHADAPI PERSALINAN

Pendahuluan: Di Indonesia 107.000 ibu hamil mengalami kecemasan dalam menghadapi persalinan. Kecemasan lebih banyak dialami pada ibu hamil Primigravida(Kehamilan pertama) dibandingkan ibu hamil MultigravidaFaktor yang mempengaruhi proses lama persalinan antara lain, faktor *power* (kekuatan mengedan ibu), *passage* (jalan lahir), *passanger* (bayi), *psyche* (kejiwaan ibu) dan *provider* (penolong). Salah satu faktor yang berpengaruh terhadaap keselamatan persalinan adalah faktor kecemasan pada saat proses persalinan. Kecemasan dan ketakutan dapat mengakibatkan rasa nyeri yang hebat dan juga dapat mengakibatkan menurunnya kontraksi uterus, sehingga persalinan akan bertambah lama.

Tujuan: Tujuan dalam penelitian untuk mengetahui hubungan komunikasi terapeutik dengan tingkat kecemasan ibu primigravida dalam menghadapi persalinan.

Metode: Penelitian ini merupakan jenis penelitian analitik dengan desain penelitian cross sectional. populasi adalah seluruh ibu bersalin primigravida di RS TK IV Cijantung Kesdam Jaya Tahun 2023 sebanyak 30 orang. Sampel penelitian ini adalah seluruh ibu hamil primigravida menjelang persalinan di RS TK IV Cijantung Kesdam Jaya pada Bulan Januari dan Februari 2023 sebanyak 30 responden. Teknik pengambilan sampel dalam penelitian ini adalah purposive sampling. Analisis data dengan *Chi Square.*.

Hasil Penelitian: tingkat kecemasan ibu primigravida dalam menghadapi persalinan mayoritas tingkat kecemasan responden 43,3%. Dari hasil uji statistik didapatkan nilai P value = 0,000.

Kesimpulan: Penelitian ini menunjukan bahwa terdapat hubungan komunikasi terapeutik dengan tingkat kecemasan ibu primigravida dalam menghadapi persalinan.

Saran : dari hasil penelitian ini diharapkan pihak rumah sakit dapat meningkatkan pelayanan kesehatan pada ibu bersalin dengan mengelola pelaksanaan komunikasi terapeutik oleh bidan dalam memberikan asuhan pada ibu pada masa persalinan

Kata Kunci: Komunikasi, Terapeutik, Kecemasan, Primigravida, Persalinan

ABSTRACT

Introduction: In Indonesia, 107,000 pregnant women experience anxiety when facing childbirth. Anxiety is experienced more often in Primigravida pregnant women (first pregnancy) than in Multigravida pregnant women Factors that influence the length of the labor process include power factors (mother's pushing strength), passage (birth canal), passanger (baby), psyche (mother's psychology) and provider (helper). One of the factors that influences the safety of childbirth is anxiety during the birth process. Anxiety and fear can cause severe pain and can also result in decreased uterine contractions, so that labor will take longer.

Objective: The aim of the research is to determine the relationship between therapeutic communication and the level of anxiety of primigravida mothers in facing childbirth.

Method: This research is an analytical type of research with a cross sectional research design. The population is all 30 primigravida mothers giving birth at TK IV Cijantung Kesdam Jaya Hospital in 2023. The sample for this research was all primigravida pregnant women approaching delivery at TK IV Cijantung Kesdam Jaya Hospital in January and February 2023, totaling 30 respondents. The sampling technique in this research is purposive sampling. Data analysis with Chi Square.

Results: The anxiety level of primigravida mothers in facing childbirth, the majority of respondents' anxiety level was moderate 43.3%, result tatistical test was found that P value = 0.000.

Conclusion: This research shows that there is a relationship between therapeutic communication and the level of anxiety of primigravida mothers in facing childbirth.

Suggestion: Further to the results of this research, it is hoped that the hospital will improve health services for birthing mothers by managing the implementation of therapeutic communication by midwives in providing care to mothers during labor.

Keywords: Communication, Therapeutic, Anxiety, Primigravida, Childbirth

INTRODUCTION

According to WHO (2023) aternal mortality is very high. About 287,000 women died during and after pregnancy and childbirth in 2020. Nearly 95% of all maternal deaths occurred in low-and middle - income countries in 2020, and most were preventable (WHO, 2023).

Several factors that influence the length of the labor process include power factors (mother's pushing strength), journey (birth canal), passenger (baby), soul (mother's psychology) and provider (helper). Power factors include the mother's strength to push during labor and HIS delivery, trajectory factors include pelvic type, pelvic size, Chepalo Pelvic Disproportional (CPD), weak birth canal abnormalities, hanging stomach. Passenger factors include large fetus, fetal weight, abnormality, presentation or position of the fetus. Psychological factors include anxiety, fatigue, exhaustion, and worry. Provider factors include epidural analgesia, lying position (Mochtar,2013).

One of the factors that influences the safety of childbirth is anxiety during the birth process. Anxiety that occurs in pregnant women can affect the health of the mother and the fetus she is carrying. In this case, parity is one of the coping mechanisms that influences the level of anxiety in facing the birthing process. Mothers who give birth surgically experience different anxiety compared to mothers who give birth normally (Ambar, 2011).

In Indonesia, 107,000 pregnant women experience anxiety when facing childbirth. Anxiety is experienced more often in Primigravida pregnant women (first pregnancy) than in Multigravida pregnant women (Novitasari, 2013). Anxiety can arise, especially in the third trimester of pregnancy until delivery, where during this period pregnant women feel anxious about various things. In general, mothers experiencing pregnancy for the first time will feel anxious because pregnancy is a new experience and anxiety cannot be avoided from everyday life. A study shows that pregnant women with high levels of anxiety have a risk of giving birth to premature babies and even miscarriage (Astria, 2009)

Anxiety in primigravida pregnant women can arise in the third trimester before labor, during this period pregnant women feel anxious about various things such as normal or abnormal babies being born, pain that will be felt, and so on (Usman et all, 2016) With the labor approach, especially in your first pregnancy, it's natural to feel anxious or afraid because pregnancy is a new experience (Maimunah, 2009).Childbirth is a phenomenon that every married couple looks forward to. For this reason, it is necessary to provide moral and material support that must be provided by the family, husband, and society for the welfare of the mother and fetus in her womb. However, when heading into the delivery process, pregnant women will feel mixed feelings. In addition to being impatient to see the baby born, the mother will also feel fear and anxiety in the face of her delivery (Maryunani, 2015).

Anxiety and fear can cause severe pain and can also result in decreased uterine contractions, so that labor will take longer. (Trisiani, 2016). Anxiety can be felt by everyone if they experience pressure and deep feelings that cause psychiatric problems and can develop in the long term (Shodiqoh, 2014). Anxiety is believed to be a common mental problem in pregnant women, including being more present in the third trimester of pregnancy. Higher levels of anxiety in the third trimester of pregnancy may be related to the closeness of childbirth, which is perceived by some pregnant women as a vulnerable moment and capable of triggering feelings of fear (Silva et al., 2017). The same thing was revealed by Hasim (2018) in his research, where anxiety in pregnancy, if not overcome as soon as possible, will have a negative impact on the mother and fetus

The most commonly associated theory regarding childbirth anxiety is the pain felt by the mother during the labor process. The relationship between pain and anxiety is a positive correlation that is interconnected like a spiral whose tip is enlarged. The effect of anxiety on a spiral-like patterned pain whose tip is enlarged. The more advanced the labor process, the mother's feelings will become more anxious, and the anxiety causes more intense pain, and vice versa (Sariati, 2016). When the mother in labor feels anxious, the body will spontaneously release catecholamine hormones (Hartati & Sumarni, 2017). The increase in this hormone will cause vasoconstriction of blood vessels so that it can increase maternal blood pressure, decrease blood flow to the uterus, decrease uteroplacental flow, and decrease uterine activity so that it can cause prolonged labor (Potter & Perry, 2019). Maternal psychopathological symptomatology

during pregnancy constitutes a significant risk factor for the well-being of the newborn. In particular, both prenatal anxiety and depression negatively affect the clinical aspects of the labor experience and, indirectly, the APGAR index (Smorti et al, 2021).

Not only that, the adverse effects of excessive anxiety on pregnant women when facing childbirth were also revealed by Ramos et al., (2022) that pregnant women who experience excessive anxiety tend to have a shorter gestational age due to corticotropinreleasing hormone activity in the placenta. It is explained that an increase in pCRH occurs between the second and third trimesters compared to the beginning of pregnancy. In addition, a sharper increase in pCRH from the beginning of pregnancy to the third trimester of pregnancy can be triggered by excessive anxiety. High levels of pCRH in the placenta can "ripen" all conception results systematically and lead to a shorter gestational age. Generally, this event is called the pregnancy clock (Ramos et al, 2022).

In this study (Whing Cheung,et all,2020) one caregiver usually took care of more than one woman during labour at any given time. Besides environmental influences, the support of the caregiver is vital to the feelings of control in the women during labour (Wing Cheung, et all (2020)). This was reinforced by Hodnett and Osborn (1989) who studied labouring women receiving continuous one-to-one caregiver support during labour. Hodnett and Osborn (1989) reported higher LAS mean score (151.3 SD=26.4) than the Chinese women during labour in the current study. This suggested that there would have been room for improvement in the current midwifery practice in Hong Kong, with the objectives for balancing economic constraints while providing quality care. Heavy reliance on a technological and medicalised approach to birth at the study unit may reflect that the administrative health policies do not value or understand the time intensiveness of being with women, and this may influence women's satisfaction and their postnatal health and well-being. Midwives are encouraged to initiate dialogue with obstetricians to look for ways of improving women's birth environment.

Midwives have the authority to provide care to patients, which includes prevention, health promotion, disease detection and even first aid needed by the patient. In providing midwifery care, midwives also have the authority to provide communication, information and education (KIE) to patients. In this case, what the patient needs is therapeutic communication. Therapeutic communication has a long-term effect, where the patient will feel more comfortable and trust the midwife, the patient will obey the recommendations given by the midwife so that the patient will recover more quickly and the birth process will be faster. However, if there is no good interaction between the patient and the midwife, serious problems can occur. Midwives who don't smile enough, are less friendly and don't give enough explanations will have a negative impact, which can cause prolonged labor. Patients will feel uncomfortable and even threatened by the midwife's attitude (Permatasari, 2016)

Based on a preliminary study at the TK IV Cijantung Kesdam Jaya Hospital, it is known that the number of births on August 2022 was 24, of which 12 were spontaneous labor and 12 were SC, in September there were 9, 3 were spontaneous and SC were 6 and in October there were 6 15 people, of which 7 people had spontaneous parturition and 8 people had SC. If we look at the number of births, it is known that many respondents chose SC delivery, one of which was because mothers who gave birth chose SC because they felt anxious because of the excruciating pain before delivery, so many decided to have SC immediately.

RESEARCH METHODS

The aim of this study was to determine the relationship between therapeutic communication and the level of anxiety of primigravida mothers in facing childbirth, using cross sectional design.

This research was conducted in TK IV Cijantung Kesdam Jaya Hospital. The sampling technique in this research is purposive sampling, namely by taking research subjects according to the sample criteria within a time limit of one month. The use of therapeutic communication by midwives to mothers giving birth and determining the level of anxiety using a questionnaire and the total sampling were 30 mother primigravida birth mother. Ho will be tested with a level of significance of 0.05. The statistical test used is Chi Square statistical analysis

RESEARCH RESULTS

Of the 30 primigravida mothers in facing childbirth at TK IV Cijantung Kesdam Jaya Hospital in 2023, majority of respondents anxiety levels were moderate anxiety, it was 43.3% and of therapeutic communication is that the majority of respondents said it was good, it was 60%.

Table 1
Distribution of the frequency Anxiety Levels and Therapeutic Communication of Primigravida Mothers in Facing Childbirth

Anxiety	frekuensi	(%)
No Anxiety	5	16,7
Mild Anxiety	9	30,0
Moderate Anxiety	13	43,3
Severe Anxiety	3	10,0
Communication of Therapeutic		
Good	18	60,0
Not Good	12	40,0

Table 2
The Relationship between Therapeutic Communication and the Anxiety Level of Primigravida Mothers in Facing Childbirth

Communication of Therapeutic	Anxiety										P value
	No Anxiety		Mild Anxiety		Moderate Anxiety		Severe Anxiety		Total		
	N	%	n	%	N	%	n	%	N	%	
Good	5	27,8	9	50,0	4	22,2	0	0	18	100	0,000
Not good	0	0	0	0	9	75	3	25	12	100	

Of the 30 primigravida mothers in facing childbirth at TK IV Cijantung Kesdam Jaya Hospital in 2023 has relationship between therapeutic communication and the level of anxiety of primigravida mothers in facing childbirth at TK IV Cijantung Hospital Kesdam Jaya in 2023 shows that respondents who received good therapeutic communication had more mild levels of anxiety have 9 of 18 people or 50%, while respondents who received therapeutic communication less well, there are more people with moderate levels of anxiety have 9 of 12 people or 75%. From the statistical test results, it was found that P value = 0.000, meaning p value < α (0.05), so it can be concluded that there is a relationship between therapeutic communication and the level of anxiety of primigravida mothers in facing childbirth at TK IV Cijantung Kesdam Jaya Hospital in 2023.

DISCUSSION

The results this studi showed that primigravida mothers in facing childbirth the majority of respondents' anxiety level was moderate was 13 respondents (43.3%), majority of respondents stated that therapeutic communication was good have 18 respondents (60%) and have relationship therapeutic communication with anxiety (P=0,000).

This studi same thing was found in a study conducted by Sri Norlina (2021) which stated that therapeutic communication was significantly related with anxiety (P=0,0006). Rusniawati, et all

(2020), the result from research have results of statistical tests using a chi-square with a 2x3 table on the Pearson chisquare, the p-value = 0.014. The p-value

The anxiety experienced by mothers at the beginning of labor is related to various factors related to the birth process. The basic reasons that make mothers anxious about childbirth include pain during delivery, the mother giving birth normally or by Cesario Sesar, whether the baby is born safely or not, whether the mother is safe or not, and costs after delivery. Ways to reduce anxiety in mothers include: midwives providing information and educating mothers to understand clear fears, creating cooperative relationships with companions, being good listeners, showing a sympathetic, helpful and communicative attitude towards mothers who are about to give birth. One effort to reduce this anxiety is to apply maternal loving care which in its application uses therapeutic communication techniques (Maryunani, 2016).

The importance of promoting the detection of women experiencing antenatal anxiety has been reflected in recent clinical guidelines. In the UK, the National Institute for Health and Care Excellence (NICE) guidance on perinatal mental health (NICE,2014) has for the first time recommended considering use of two screening questions (Generalised Anxiety Disorder scale, GAD-2) (Spitzer RL,et all. 2006) for the case-identification of anxiety in pregnant and postnatal women, and the

most recent Scottish guidelines have also called for further research in this area (SIGN,2012). However, the evidence for recommending the GAD-2 is primarily based on its good screening accuracy in the general population (NICE, 2011) with a very limited evidence base in perinatal populations. Although clinical diagnostic interviews are the optimal method of assessment for anxiety disorders, self-report rating scales such as the GAD-2 are often preferred in busy clinical practice and research because of their brevity (Austin MP, 2004)

The occurrence of pregnancy-specific anxiety has been proposed as a distinct syndrome (Huizink AC, et all, 2004) and a number of studies have investigated this unique anxiety type (Phillips J,et all, 2009) This emerging construct refers to a particular anxiety response related to a current pregnancy, which can include fears and worries around labour and delivery, the health of the baby and expected changes in a woman's role Dunkel Schetter C, et all (2012).

In relation to the 'socio-medical' subscale, one item ('Giving birth') was found to load above the predefined criterion of 0.63 in all studies, thus demonstrating strong evidence of its psychometric properties in assessing a major worry in pregnancy. Another three items showed moderate strength of evidence as they loaded above 0.63 on the 'socio-medical' subscale in all studies apart from one. Specifically, 'Internal examinations' had an item loading coefficient of 0.61 in Gourounti and colleagues, but item loadings above 0.63 in all the other studies; 'Going to hospital' (0.68–0.79), apart from Gourounti and colleagues (0.47) (Gourounti K, et all (2012)); and 'Coping with the new baby' (0.65–0.68), except for the study by Petersen and colleagues, (Petersen JJ,et all (2009)) in which its loading was 0.58.

CONCLUSION

In accordance with the general objectives stated in the previous chapter that this study was majority of respondents' anxiety level was moderate 43.3%, majority of respondents stated that therapeutic communication was 60% and have relationship therapeutic communication with anxiety (P=0,000).

SUGGESTION

Further to the results of this research, it is hoped that the hospital will improve health services for birthing mothers by managing the implementation of therapeutic communication by midwives in providing care to mothers during labor.

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