

DR. H. ABDUL MOELOEK HOSPITAL ANTIBIOTIC RESISTANCE PATTERN

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ABSTRAK : POLA RESISTENSI ANTIBIOTIK DI RS DR. H. ABDUL MOELOEK

Infeksi nosokomial adalah masalah luas yang memperpanjang durasi pemulihan, meningkatkan biaya perawatan, dan meningkatkan angka kematian pasien. Antibiotik digunakan untuk mengobati infeksi bakteri yang menyebabkan kondisi tersebut. Di Indonesia, seperti halnya di negara-negara lain, penggunaan antibiotik sudah meluas dan berlebihan, bahkan banyak yang disalahgunakan. Penelitian ini bertujuan untuk mengetahui pola resistensi antibiotik di RSUD Dr. H. Abdul Moeloek periode Januari sampai Maret 2018 dan mengetahui pola resistensi bakteri terhadap antibiotik. Penelitian ini menggunakan penelitian deskriptif. Sampel diambil dari rekam medik pasien yang mendapatkan pengobatan antibiotik yang memiliki hasil uji sensitivitas. Hasil yang diperoleh Kloramfenikol, Sulbaktam-ampi, dan Cephalexin memiliki rata-rata resistensi tertinggi (98%), diikuti oleh Cefadroxil (94%), Cefixime (91%), dan Trimethoprim (90%). Bakteri juga ditemukan paling sensitif terhadap Amikacin (> 93%), kecuali *Streptococcus* sp., yang ditemukan paling sensitif terhadap Amox-Clavulanic Acid (91%) dan Meropenem (82%). Kesimpulannya adalah sebagian besar bakteri yang diuji paling resisten terhadap Sulbaktam-Ampi (>97%) dan Penisilin (100%). Mayoritas bakteri yang teridentifikasi pada penelitian ini paling sensitif terhadap Amikasin (>92%), dengan rata-rata sensitivitas terhadap Amikasin sebesar 89% (kecuali *Streptococcus* sp.). Oleh karena itu harapannya data ini dapat dimanfaatkan untuk meningkatkan penggunaan antibiotik secara bijaksana dalam rangka mengatasi infeksi nosokomial.

Kata kunci : Antibiotik, pola bakteri, nosokomial, resistensi

ABSTRACT

Nosocomial infections are a widespread issue that prolong recovery durations, raise maintenance costs, and raise patient mortality rates. antibiotics are used to treat the bacterial infection that caused the condition. In Indonesia, as in other nations, the use of antibiotics has become widespread and excessive, with many of them being misused. This study aim to determine the antibiotic resistant pattern on Dr. H. Abdul Moeloek hospital from January to March 2018 and to determine the bacterial resistance pattern of antibiotic. This study was using a descriptive study. The samples were taken from medical records of patients who received antibiotic treatment which has a sensitivity test results. The result obtained Chloramfenicol, Sulbactam-ampi, and Cephalexin had the highest average resistance (98%), followed by Cefadroxil (94%), Cefixime (91%), and Trimethoprim (90%). They were also found to be most sensitive to Amikacin (> 93%), with the exception of *Streptococcus* sp., which was found to be the most sensitive to Amox-Clavulanic Acid (91%) and Meropenem (82%). The conclusion is most of the bacteria tested were most resistant to Sulbactam-Ampi (> 97%) and Penicillin (100%). The majority of the bacteria identified in this study were most sensitive to Amikacin (> 92%), with an average sensitivity to Amikacin of 89% (with the exception of *Streptococcus* sp.). Therefore, it can be utilized to increase the prudent use of antibiotics in order to overcome the nosocomial infections.

Keywords : Antibiotic, bacterial pattern, nosocomial, resistance.

INTRODUCTION

Nosocomial infection are a worldwide problem, occurring primarily in undeveloped and underdeveloped nations where infectious diseases are still prevalent as their primary cause. The

incidence of nosocomial infection was 10% (Bouza *et al.*, 2019). Nosocomial infections lengthen treatment times, increase maintenance expenses, and increase the risk of patient death (Khan, Baig, Mehboob, 2017). Antibiotics are frequently used to

treat infectious infections. High accuracy is needed when choosing antibiotics because there are more clinically beneficial drugs available because to technological advancements. The evolution of bacterial resistance and limited antibiotic efficiency against some bacteria are two consequences of improper antibiotic choice. Antibiotic-resistant bacteria have a significant clinical impact. After a few years, a bacterium that was initially sensitive to an antibiotic can develop resistance, making the treatment process more challenging because it is challenging to find drugs that can eliminate the bacteria (Firizky, 2014).

The Centers for Disease Control and Prevention estimate that two million Americans contract antibiotic-resistant bacteria each year, and at least 23,000 of them pass away as a direct result of this resistance. Antibiotics are kept in homes 86% of the time without a prescription, with Lampung province having the second-highest rate at 92% after Central Kalimantan (93.4%). This demonstrates that there is still a lack of public understanding of the advantages, uses, and effects of using antibiotics, as evidenced by the alarming amount of antibiotic use in Indonesia (Risksdas, 2013).

The majority of antibiotic use happens in hospitals, so to increase the wise use of antibiotics, there should be a program to control infection, control resistant bacteria, monitor antibiotic use in hospitals, make new guidelines for the use of antibiotics and prophylaxis on an ongoing basis, and monitor antibiotic use in hospitals. The hospital tracks the susceptibility pattern by documenting susceptibility test laboratory results, which may then be used to create guidelines for the use of antibiotics and identify those that are still effective. Antibiotic use can be done in a proper, safe, and efficient manner with superior clinical results. In order to execute antibiotic management and supervision, preliminary study on antibiotic sensitivity is required (WHO, 2001). This

study aim to determine the antibiotic resistant pattern on Dr. H. Abdul Moeloek hospital. This study's hypothesis is that the Dr. H. Abdul Moeloek Hospital has bacterial resistance, which leads to antibiotic resistance.

METHOD

This study employs descriptive research techniques, information were gathered from the outcomes of tests conducted using the laboratory examination register book. The Gram staining, Nutrient Agar and Mac Conkey medium was launched. After determining the genus/species of the bacteria, the Kirby Bauer diffusion method antibiotic susceptibility test was conducted. In this, Mueller Hinton agar with 23 different antibiotics were used. Followed by a resistance test using a VITEK 2 machine, and CLSI guidelines (Clinical and Laboratory Standards Institute), the inhibition zone diameter formed is interpreted as indicating bacterial sensitivity to antibiotics (CLSI, 2012).

Between January and March 2018, this study was carried out at the Clinical Pathology Laboratory of the Regional General Hospital Dr. H. Abdul Moeloek in Lampung Province. Using information from medical records, specifically the findings of an investigation of culture and resistance, the sample employed is total sampling.

RESULT

Tree hundred samples, including those made from blood, urine, pus, sputum, body fluids, and swabs, yielded *Alcaligenes sp*, *Escherichia coli*, *Enterobacter sp*, *Klebsiella sp*, *Proteus sp*, *Pseudomonas sp*, *Staphylococcus sp* and *Streptococcus sp*.

Frequency Distribution of Specimen Type

The frequency distribution of each type of specimen are shown in Table 1.

Table 1
Frequency Distribution of Specimen Type

Specimen type	January	February	March	n	Percentage (%)
	n	n	n		
Blood	29	15	4	48	16
Urine	7	9	12	28	9
Pus	53	41	47	141	47
Sputum	19	27	8	54	18
Body fluid	4	4	1	9	3
Swab	6	12	2	20	7

According to Table 1, the majority of specimen types has 141 samples, making up 47% of

the entire sample. 48 blood samples (16%), 28 urine samples (9%) 54 sputum samples (18%), 9 body fluid samples (3%), and 20 swabs (7%).

Frequency Distribution of Bacterial Growth

The frequency distribution of bacterial growth are shown in Table 2.

Table 2
Frequency Distribution of Bacterial Growth

Bacterial Growth	January n	February n	March n	n	Percentage (%)
Positive	118	108	74	300	50
Negative	88	120	96	304	50

Based on Table 2 above, it was determined that there were 300 samples of bacterial growth with a percentage (50%) and that there was no bacterial growth or sterile, i.e. 304 samples with a percentage (50%) from the findings of the bacterial culture.

Distribution of Bacterial Growth Frequency by Room

Based on the results of the culture examination, it was discovered that the following was the distribution of Bacterial Growth Frequency by room:

Table 3.
Distribution of Bacterial Growth Frequency by Room

Room	Specimen						Total	%
	Blood	Urine	Pus	Sputum	Body fluid	Swab		
ICU	14	18	4	25	1	0	62	21
Alamanda	21	1	1	2	2	0	27	9
Mawar	1	0	21	0	0	0	22	7
Kutilang	1	1	22	0	0	0	24	8
Vip A	1	1	1	0	0	0	3	1
PBHB	1	0	2	0	1	0	4	1
Murai	1	3	11	1	0	1	17	6
Kenanga	3	2	15	0	0	0	20	7
Maha Munyai	2	0	2	0	0	0	4	1
Aster	1	0	0	0	0	0	1	0
Tulip	1	0	0	0	0	0	1	0
Melati	1	2	20	19	5	19	66	22
Gelatik	0	0	12	0	0	0	12	4
Kemuning	0	0	8	0	0	0	8	3
Delima	0	0	7	0	0	0	7	2
VIP B	0	0	4	2	0	0	6	2
Anyelir	0	0	2	0	0	0	2	1
UGD	0	0	1	0	0	0	1	0
PBHA	0	0	1	1	0	0	2	1
SMC	0	0	7	4	0	0	11	4

According to Table 3 above, up to 66 samples (22%) from the Melati room contained bacterial growth.

Figure 1 shows the three specimens that were collected most frequently: pus, sputum, and blood. While the previous study obtained the most specimens, it only obtained 75% of the isolates from pus isolates, 78% from sputum isolates, and 95% from blood isolates (Hayati, 2019).

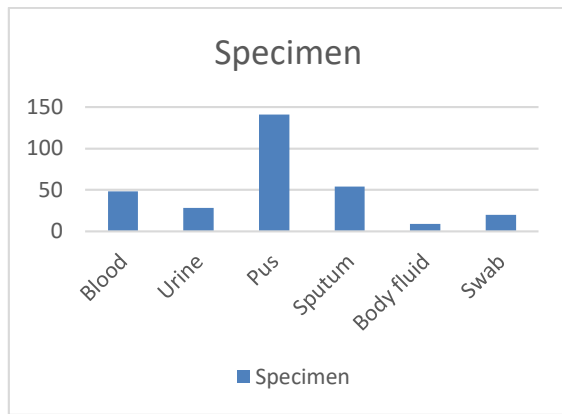


Figure 1. Specimen Distribution

Bacterial Frequency Distribution Based on Bacterial Culture Results

The bacteria identified on bacterial culture results were as follows:

This study found *Enterobacter sp* on 98 samples (33%), *Alcaligenes sp* 57 samples (19%), *Proteus sp* samples 43 (14%), *Klebsiella sp* 39 samples (13%), *Pseudomonas sp* 38 samples (13%),

Streptococcus sp 11 samples (4%), *Staphylococcus sp* 9 samples (3%), dan *Escherichia coli* 5 samples (2%).

Table 4.
Frequency Distribution Based on Bacterial Culture Results

Name of bacteria	n	Percentage (%)
<i>Pseudomonas sp</i>	38	13
<i>Enterobacter sp</i>	98	33
<i>Proteus sp</i>	43	14
<i>Alcaligenes sp</i>	57	19
<i>Staphylococcus sp</i>	9	3
<i>Klebsiella sp</i>	39	13
<i>Escherichia coli</i>	5	2
<i>Streptococcus sp</i>	11	4

Bacterial Frequency Distribution Based on Specimen Type

Bacterial culture result from specimen type were shown below:

Table 5.
Bacterial Frequency Distribution on Blood, Urine and Pus

Name of bacteria	Blood		Urine		Pus		n
	n	%	n	%	n	%	
<i>Pseudomonas sp</i>	6	13	0	0	25	18	31
<i>Enterobacter sp</i>	19	40	16	57	43	30	78
<i>Proteus sp</i>	2	4	1	4	27	19	30
<i>Alcaligenes sp</i>	15	31	8	29	22	16	45
<i>Staphylococcus sp</i>	5	10	1	4	2	1	8
<i>Klebsiella sp</i>	1	2	0	0	21	15	22
<i>Escherichia coli</i>	0	0	0	0	0	0	0
<i>Streptococcus sp</i>	0	0	2	7	1	1	3

From blood specimen, *Pseudomonas sp* was found on 6 samples (13%), *Enterobacter sp* 19 samples (40%), *Proteus sp* 2 samples (4%), *Alcaligenes sp* 15 samples (31%), *Staphylococcus sp* 5 samples (10%), *Klebsiella sp* 1 samples (2%), and negative for *Escherichia coli* and *Streptococcus sp*. On urine specimen, *Enterobacter sp* was found on 16 samples (57%), *Proteus sp*, *Staphylococcus sp* 1 sample (10,7%), *Alcaligenes sp* 8 samples (29%), *Klebsiella sp* 1 sample (3,6%). *Streptococcus*

sp 2 sample (7%), and negative for *Pseudomonas sp*, *Klebsiella sp*, *Escherichia coli*.

The culture of pus specimen found *Pseudomonas sp* 25 samples (18%), *Enterobacter sp* 43 samples (30%), *Proteus sp* 27 samples (19%), *Alcaligenes sp* 22 samples (16%), *Staphylococcus sp* samples 2 (1%), *Klebsiella sp* 21 samples (15%), *Staphylococcus sp* 1 samples (1%), and negative for *Escherichia coli*.

Table 6.
Frequency Distribution on Sputum, Body Fluid and Swab

Name of bacteria	Sputum		Body fluid		Swab		n
	n	%	n	%	n	%	
<i>Pseudomonas sp</i>	2	4	2	22	3	15	7
<i>Enterobacter sp</i>	14	26	2	22	4	20	20
<i>Proteus sp</i>	9	17	2	22	2	10	13
<i>Alcaligenes sp</i>	8	15	3	33	1	5	12
<i>Staphylococcus sp</i>	0	0	0	0	1	5	1
<i>Klebsiella sp</i>	16	30	0	0	1	5	17
<i>Escherichia coli</i>	4	7	0	0	1	5	5
<i>Streptococcus sp</i>	1	2	0	0	7	35	8

Bacterial culture result obtained from sputum were *Pseudomonas sp* 2 samples (4%), *Enterobacter sp* 14 samples (26%), *Proteus sp* 9 samples (17%), *Alcaligenes sp* 8 samples (15%), *Klebsiella sp* 16 samples (30%), *Escherichia coli* and *Streptococcus sp* 1 sample (2%), none for *Staphylococcus sp*. Based on specimen obtained from body fluid, *Pseudomonas sp*, *Enterobacter sp*, and *Proteus sp* was found on 2 samples (22%), *Alcaligenes sp* sebanyak 3 (33%), negative for, *Staphylococcus sp*, *Klebsiella sp*, *Escherichia coli* and *Streptococcus sp*.

While *Pseudomonas sp* obtained from 3 samples (15%), *Enterobacter sp* 4 samples (20%),

Proteus sp 2 samples (10%), *Alcaligenes sp*, *Staphylococcus sp*, *Klebsiella sp*, *Escherichia coli sp* and *Streptococcus sp* 1 sample (5%) on swab specimen.

The Results of Resistance of Antibiotics Test in Bacterial Groups

Table 7 conducted the results of the resistance pattern distribution.

Pseudomonas sp

The results of resistance pattern distribution of *Pseudomonas sp*:

Table 7
Resistance Pattern Distribution of *Pseudomonas sp*

Antibiotic	Resistant		Intermediate		Sensitive	
	n	%	n	%	n	%
Aztreonam	13	33	0	0	27	68
Trimetoprim	35	88	0	0	5	13
Amikacin	5	13	0	0	35	88
Meropenem	21	53	0	0	19	48
Ceftazidime	12	30	0	0	28	70
Cefixime	37	93	0	0	3	8
Amoxisillin	40	100	0	0	0	0
Ceftriaxone	28	70	1	3	11	28
Chloramphenicol	40	100	0	0	0	0
Netilmicin	18	45	0	0	22	55
Cefpodoxime	36	90	0	0	4	10
Cefoperazone	13	33	1	3	26	65
Ampisilin	39	98	0	0	1	3
Sulbactam-Ampi	40	100	0	0	0	0
Amox-Clavulanic Acid	29	73	0	0	11	28
Sulactum-Cefpirom	20	50	0	0	20	50
Cefotaxime	22	55	5	13	13	33
Streptomycin	37	93	0	0	3	8
Cefadroxil	40	100	0	0	0	0
Gentamicin	31	78	0	0	9	23
Tetracyclin	38	95	0	0	2	5

Cephalexin	39	98	0	0	1	3
Penicillin	40	100	0	0	0	0

Based on Table 7, *Pseudomonas sp.* have the highest resistance to several antibiotics, namely Amoxicillin (100%), Sulbactam-Ampi (100%), Cefadroxil (100%) and Penicillin (100%) and were still sensitive to Amikacin (88%).

Enterobacter sp

While the results of resistance pattern distribution of *Enterobacter sp* were shown on Table 8:

Table 8
Resistance Pattern Distribution of *Enterobacter sp*

Antibiotic	Resistant		Intermediate		Sensitive	
	n	%	n	%	n	%
Aztreonam	60	63	2	2	33	35
Trimetoprim	82	86	0	0	13	14
Amikacin	6	6	1	1	88	93
Meropenem	49	52	0	0	46	48
Ceftazidime	56	59	2	2	37	39
Cefixime	85	89	1	1	9	9
Amoxisillin	80	84	0	0	15	16
Ceftriaxone	71	75	1	1	23	24
Chloramphenicol	92	97	0	0	3	3
Netilmicin	36	38	0	0	59	62
Cefpodoxime	81	85	1	1	13	14
Cefoperazone	64	67	5	5	26	27
Ampisilin	84	88	0	0	11	12
Sulbactam-Ampi	92	97	0	0	3	3
Amox-Clavulanic Acid	44	46	1	1	50	53
Sulactum-Cefpirom	62	65	0	0	33	35
Cefotaxime	60	63	3	3	32	34
Streptomycin	83	87	0	0	12	13
Cefadroxil	87	92	0	0	8	8
Gentamicin	70	74	0	0	25	26
Tetracyclin	81	85	0	0	14	15
Cephalexin	92	97	0	0	3	3
Penicillin	94	99	0	0	1	1

According to Table 8, *Enterobacter sp.* were still sensitive to Amikacin (93%), although having the highest resistance of Penicillin (99%).

Proteus sp

The results of resistance pattern distribution of *Proteus sp* were shown on Table 9:

Table 9
Resistance Pattern Distribution of *Proteus sp*

Antibiotic	Resistant		Intermediate		Sensitive	
	n	%	n	%	n	%
Aztreonam	25	58	1	2	17	40
Trimetoprim	42	98	0	0	1	2
Amikacin	2	5	0	0	41	95
Meropenem	12	28	0	0	31	72
Ceftazidime	24	56	1	2	18	42
Cefixime	37	86	1	2	5	12
Amoxisillin	41	95	0	0	2	5

Ceftriaxone	36	84	0	0	7	16
Chloramphenicol	43	100	0	0	0	0
Netilmicin	16	37	1	2	26	60
Cefpodoxime	40	93	0	0	3	7
Cefoperazone	34	79	2	5	7	16
Ampisilin	38	88	0	0	5	12
Sulbactam-Ampi	43	100	0	0	0	0
Amox-Clavulanic Acid	28	65	1	2	14	33
Sulactum-Cefpirom	24	67	0	0	12	33
Cefotaxime	27	63	1	2	15	35
Streptomycin	32	74	0	0	11	26
Cefadroxil	43	100	0	0	0	0
Gentamicin	32	74	0	0	11	26
Tetracyclin	35	81	0	0	8	19
Cephalexin	42	98	0	0	1	2
Penisillin	43	100	0	0	0	0

According to Table 9, *Proteus sp.* were still sensitive to Amikacin (95%), but resistance to the following antibiotics: Chloramphenicol (100%), Sulbactam-Ampi (100%), Cefadroxil (100%), and Penicillin (100%).

Alcaligenes sp

The results of the resistance pattern distribution of *Alcaligenes sp* obtained the following results:

Table 10
Resistance Pattern Distribution of *Alcaligenes sp*

Antibiotic	Resistant		Intermediate		Sensitive	
	n	%	n	%	n	%
Aztreonam	31	51	1	2	29	48
Trimetoprim	59	97	0	0	2	3
Amikacin	10	16	1	2	50	82
Meropenem	22	36	0	0	39	64
Ceftazidime	33	54	2	3	26	43
Cefixime	58	95	0	0	3	5
Amoxisillin	55	90	0	0	6	10
Ceftriaxone	45	74	1	2	15	25
Chloramphenicol	58	95	0	0	3	5
Netilmicin	31	51	0	0	30	49
Cefpodoxime	52	85	0	0	9	15
Cefoperazone	45	74	1	2	15	25
Ampisilin	54	89	0	0	7	11
Sulbactam-Ampi	61	100	0	0	0	0
Amox-Clavulanic Acid	39	64	1	2	21	34
Sulactum-Cefpirom	39	64	0	0	22	36
Cefotaxime	43	70	2	3	16	26
Streptomycin	53	87	0	0	8	13
Cefadroxil	57	93	0	0	4	7
Gentamicin	46	75	0	0	15	25
Tetracyclin	55	90	0	0	6	10
Cephalexin	61	100	0	0	0	0
Penisillin	61	100	0	0	0	0

Based on Table 10, *Alcaligenes sp.* have the highest resistance to Sulbactam-Ampi (100%), Cephalexin (100%), Penicillin (100%) and were still sensitive to Amikacin (82%).

Staphylococcus sp

The results of resistance pattern distribution of *Staphylococcus sp* were obtained as follows:

Table 11
Resistance Pattern Distribution of *Staphylococcus sp*

Antibiotic	Resistant		Intermediate		Sensitive	
	n	%	N	%	n	%
Aztreonam	6	67	0	0	3	33
Trimetoprim	9	100	0	0	0	0
Amikacin	1	11	0	0	8	89
Meropenem	6	67	0	0	3	33
Ceftazidime	4	44	1	11	4	44
Cefixime	9	100	0	0	0	0
Amoxisillin	4	44	0	0	5	56
Ceftriaxone	6	67	1	11	2	22
Chloramphenicol	9	100	0	0	0	0
Netilmicin	7	78	0	0	2	22
Cefpodoxime	7	78	0	0	2	22
Cefoperazone	5	56	0	0	4	44
Ampisilin	5	56	0	0	4	44
Sulbactam-Ampi	9	100	0	0	0	0
Amox-Clavulanic Acid	6	67	0	0	3	33
Sulactum-Cefpirom	6	67	0	0	3	33
Cefotaxime	5	56	0	0	4	44
Streptomycin	8	89	0	0	1	11
Cefadroxil	7	78	0	0	2	22
Gentamicin	6	67	0	0	3	33
Tetracyclin	4	44	0	0	5	56
Cephalexin	8	89	0	0	1	11
Penisillin	9	100	0	0	0	0

Based on Table 11, *Staphylococcus sp.* has the highest resistance to Trimethoprim (100%), Cefixime (100%), Chloramphenicol (100%), Sulbactam-Ampi (100%), Penicillin (100%), and were still sensitive to Amikacin (89%).

Klebsiella sp

The results of resistance pattern distribution of *Klebsiella sp* were obtained as follows:

Table 12
Resistance Pattern Distribution of *Klebsiella sp*

Antibiotic	Resistant		Intermediate		Sensitive	
	n	%	n	%	n	%
Aztreonam	15	38	1	3	24	60
Trimetoprim	34	85	0	0	6	15
Amikacin	3	8	0	0	37	93
Meropenem	6	15	0	0	34	85
Ceftazidime	26	65	0	0	14	35
Cefixime	36	90	0	0	4	10
Amoxisillin	38	95	0	0	2	5
Ceftriaxone	30	75	0	0	10	25
Chloramphenicol	40	100	0	0	0	0
Netilmicin	15	38	0	0	25	63

Cefpodoxime	31	78	0	0	9	23
Cefoperazone	28	70	1	3	11	28
Ampisilin	38	95	0	0	2	5
Sulbactam-Ampi	40	100	0	0	0	0
Amox-Clavulanic Acid	26	65	0	0	14	35
Sulactum-Cefpirom	29	73	0	0	11	28
Cefotaxime	30	75	2	5	8	20
Streptomycin	32	80	0	0	8	20
Cefadroxil	37	93	1	3	2	5
Gentamicin	29	73	0	0	11	28
Tetracyclin	35	88	0	0	5	13
Cephalexin	39	98	1	3	0	0
Penisillin	40	100	0	0	0	0

Based on Table 12, *Klebsiella sp.* has the highest resistance to Chloramphenicol (100%), Sulbactam-Ampi (100%), Penicillin (100%), and were still sensitive to Amikacin (93%).

Escherichia coli

The results of resistance pattern distribution of *Escherichia coli* were obtained as follows:

Tabel 13.
Resistance Pattern Distribution of *E. coli*

Antibiotic	Resistant		Intermediate		Sensitive	
	n	%	n	%	n	%
Aztreonam	1	100	0	0	0	0
Trimetoprim	1	100	0	0	0	0
Amikacin	0	0	0	0	1	100
Meropenem	0	0	0	0	1	100
Ceftazidime	1	100	0	0	0	0
Cefixime	1	100	0	0	0	0
Amoxisillin	1	100	0	0	0	0
Ceftriaxone	1	100	0	0	0	0
Chloramphenicol	0	0	0	0	1	100
Netilmicin	0	0	0	0	1	100
Cefpodoxime	1	100	0	0	0	0
Cefoperazone	0	0	0	0	1	100
Ampisilin	0	0	0	0	1	100
Sulbactam-Ampi	0	0	0	0	1	100
Amox-Clavulanic Acid	0	0	0	0	1	100
Sulactum-Cefpirom	0	0	0	0	1	100
Cefotaxime	0	0	1	100	0	0
Streptomycin	1	100	0	0	0	0
Cefadroxil	1	100	0	0	0	0
Gentamicin	1	100	0	0	0	0
Tetracyclin	1	100	0	0	0	0
Cephalexin	1	100	0	0	0	0
Penisillin	1	100	0	0	0	0

Based on Table 13 *E. coli* has the highest resistance to Aztreonam (100%), Trimethoprim (100%), Ceftazidime (100%), Cefixime (100%), Amoxicillin (100%), Ceftriaxone (100%), Cefpodoxime (100%), Streptomycin (100%), Cefadroxil (100%), Gentamicin (100%), Tetracyclin (100%), Penicillin (100%), and was still sensitive to

Amikacin (100%), Meropenem (100%), Chloramphenicol (100%), Netilmicin (100%), Cefoperazone (100%), Ampicillin (100%), Sulbactam-Ampi (100%), Amox-Clavulanic Acid (100%), Sulactum-Cefpirom (100%).

Streptococcus sp

The results of resistance pattern distribution of *Streptococcus sp* were obtained as follows:

Table 14
Resistance Pattern Distribution of *Streptococcus sp*

Antibiotic	Resistant		Intermediate		Sensitive	
	n	%	n	%	n	%
Aztreonam	9	82	0	0	2	18
Trimetoprim	8	73	0	0	3	27
Amikacin	3	27	0	0	8	73
Meropenem	2	18	0	0	9	82
Ceftazidime	5	45	0	0	6	55
Cefixime	9	82	0	0	2	18
Amoxisillin	9	82	0	0	2	18
Ceftriaxone	8	73	0	0	3	27
Chloramphenicol	11	100	0	0	0	0
Netilmicin	3	27	0	0	8	73
Cefpodoxime	6	55	0	0	5	45
Cefoperazone	3	27	0	0	8	73
Ampisilin	9	82	0	0	2	18
Sulbactam-Ampi	10	91	0	0	1	9
Amox-Clavulanic Acid	1	9	0	0	10	91
Sulactum-Cefpirom	9	82	0	0	2	18
Cefotaxime	7	64	1	0	3	27
Streptomycin	8	73	0	0	3	27
Cefadroxil	10	91	0	0	1	9
Gentamicin	5	45	0	0	6	55
Tetracyclin	11	100	0	0	0	0
Cephalexin	11	100	0	0	0	0
Penisillin	11	100	0	0	0	0

Based on Table 14 *Streptococcus sp* have the highest resistance to antibiotics Chloramphenicol (100%), Tetracyclin (100%), Cephalexin (100%), Penicillin (100%). Table 7 to Table 14 show that the majority of the tested microorganisms were mostly resistant to penicillin (100%) and sulbactam-ampi (>

96%). The majority of the bacteria identified in this study were most sensitive to amikacin (> 92%), the average sensitivity to amikacin was 89%. With the exception of *Streptococcus sp.*, which was discovered to be the most sensitive to amox-clavulanic acid (91%) and meropenem (82%).

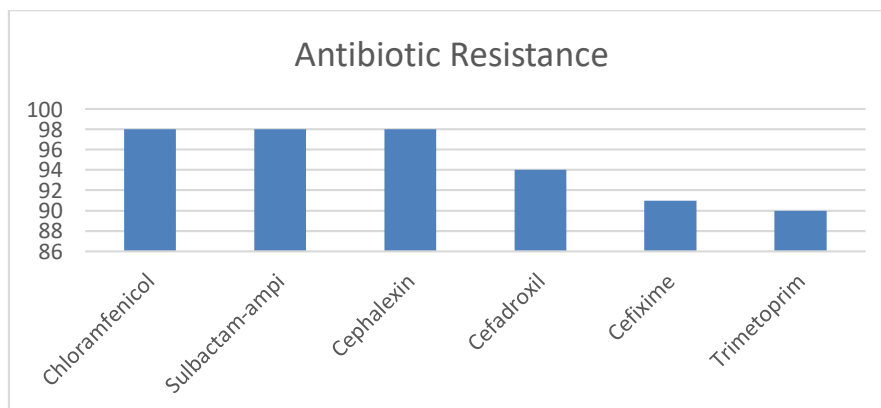


Figure 2. Antibiotic resistance

Chloramfenicol, Sulbactam-ampicillin, and Cephalexin had the highest average resistance (98%), followed by Cefadroxil (94%), Cefixime (91%), and Trimethoprim (90%), as shown on Figure 2.

DISCUSSION

Frequency Distribution of Specimen Type

Based on analysis of bacterial culture tests performed in the Clinical Pathology Laboratory at Dr. H. Abdul Moeloek Hospital's Microbiology Division, on January to March 2018, a variety of specimens, including blood, urine, pus, sputum, body fluids, and swab specimens; of these, 141 pus samples (47%) of the entire sample, were taken. Forty eight blood samples (16%), 28 urine samples (9%), 54 sputum samples (18%), 9 body fluid samples (3%), and 20 swabs (7%). Numerous bacterial species, including *Enterobacter*, *Alcaligenes sp*, *Proteus sp*, *Klebsiella sp*, *Pseudomonas sp*, *Staphylococcus sp*, *Streptococcus sp*, and *E. coli*, were isolated from all specimens. Pus specimens were evidently the most prevalent specimens in cultures conducted.

The greatest threat from gram-positive bacteria right now comes from a pandemic of resistant *S. aureus* and *Enterococcus sp*. MRSA kills (CDC, 2013; Rossolini, 2014) more Americans year than AIDS, Parkinson's, emphysema, and homicide put together. Vancomycin-resistant enterococci as well as an increasing number of other infections, are becoming resistant to several popular medicines, according to (Gross, 2013; Golkar, Bagazra, Pace, 2014). Drug resistance among common respiratory infections, such as *Streptococcus pneumoniae* and *Mycobacterium TB*, is rampantly spreading around the globe (Ventola, 2015).

Gram-negative infections pose a special threat because they are increasingly resistant to almost all of the existing antibiotic medication alternatives, evoking conditions from the time before antibiotics were developed (CDC, 2013; Golkar, Bagazra, Pace, 2014; Rossolini, 2014). Every area of medicine has been impacted by the advent of Multi Drugs Resistance (and increasingly pan-resistant) gram-negative bacteria (Golkar, Bagazra, Pace, 2014). The most dangerous strains of gram-negative bacteria, including *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Acinetobacter*, are most frequently seen in healthcare settings. Gram-negative bacteria with resistance to (CDC, 2013; Rossolini, 2014) antibiotics are also growing in the population (Rossolini, 2014).

These include *Neisseria gonorrhoeae* and *Escherichia coli* that produce extended-spectrum beta-lactamases (Ventola, 2015). *Staphylococcus*

aureus was resistant to antibiotics Penicillin G (100%), Gentamicin (41.67%), Ciprofloxacin (41.67%), and Ceftriaxone (50%) according to the pattern of microbial resistance in RSUD Dr. Moewardi from January to July 2015 regarding to prior study (Sulistianingrum, 2015).

Frequency Distribution of Bacterial Growth

The results of the bacterial culture study, which demonstrate that there is no bacterial growth in up to 304 samples but bacterial growth in up to 300 samples, reveal the presence of bacterial growth. *Enterobacter sp* had a growth rate of up to 98 (33%), which was the maximum. This is due to the widespread distribution of *Enterobacter sp* bacteria in the environment, food, water, soil, and vegetables. As opportunistic infections, *Enterobacter sp* can infect a person when their immune system is compromised.

When 141 samples were gathered for Pajariu et al.'s study at RSUD Dr. Kariadi Semarang in 2010, *Escherichia coli* accounted for up to 57.4% of the bacteria, whereas in the study mentioned above, *Enterobacter sp*. accounted for up to 98 (33%) (Pajariu A., Firmanti S. C., Isbandrio B., 2010). The researcher contends that this happens because the samples in each study were not the same number or from the same geographic region.

Distribution of Bacterial Growth Frequency by Room

In the completion of the culture investigation, it was discovered that the Melati room had the highest proportion of bacterial growth, with 66 samples (22%), followed by the ICU with 62 samples (21%), Alamanda with 27 samples (9%). In ICU rooms, bacteria were isolated from clothing, walls, floors, beds, equipment, and the air, according to earlier research (Hidayat, 2014; Khadoura, 2014; Hailemariam, 2016).

According to researchers, the Jasmine room was a lung disease treatment room where the majority of lung disease transmission occurs through the air, making it easier for bacterial growth to spread from patient to patient.

Bacterial Frequency Distribution Based on Bacterial Culture Result

Pseudomonas sp. have the highest levels of resistance to various antibiotics, including Amoxicillin, Sulbactam-Ampicillin, Cefadroxil, and Penicillin (100%) but it was still sensitive to Amikacin (88%). The *Enterobacter sp*. were still sensitive to Amikacin (93%), while having the highest Penicillin resistance (99%). Chloramphenicol, Sulbactam-

Ampi, Cefadroxil, and Penicillin were the antibiotics to which *Proteus sp.* were most resistant (100%) whereas Amikacin (95%) were still sensitive. *Alcaligenes sp.* were still sensitive to Amikacin (82%), although having the maximum resistance to Sulbactam-Ampi, Cephalexin, and Penicillin (100%).

However, *Staphylococcus sp.* were still susceptible to Amikacin (89%), despite having the highest level of resistance to Trimethoprim, Cefixime, Chloramphenicol, Sulbactam-Ampi, and Penicillin (100%). While *Klebsiella sp.* was remained sensitive to Amikacin (93%), it had the maximum resistance to Chloramphenicol, Sulbactam-ampicillin, and Penicillin (100%). *Escherichia coli* has the highest resistance to antibiotics Aztreonam, Trimethoprim, Ceftazidime, Cefixime, Amoxicillin, Ceftriaxone, Cefpodoxime, Streptomycin, Cefadroxil, Gentamicin, Tetracyclin and Penicillin (100%), still sensitive to Amikacin, Meropenem, Chloramphenicol, Ampicillin, Netilamphenicol, Sulbactam-Ampi, Amox-Clavulanic Acid, and Sulactum-Cefpirom (100%) otherwise. While *Streptococcus sp.* had the highest resistance to Chloramphenicol, Tetracyclin, Cephalexin, Penicillin (100%) however it was still sensitive to Amox-Clavulanic Acid (91%) and Meropenem (82%).

Chloramfenicol, Sulbactam-ampi, and Cephalexin had the highest average resistance (98%), followed by Cefadroxil (94%), Cefixime (91%), and Trimethoprim (90%). The majority of the bacteria identified in this study were most sensitive to amikacin (> 92%). On the other side, the average of antibiotic resistance levels for *Klebsiella pneumoniae*, *E. coli*, and *Staphylococcus aureus* were 56.82%, 54.55%, and 45.45%, respectively. With average bacterial resistance of *Klebsiella pneumonia* (56.82%), *E. coli* (54.55%), *P. vesicularis* (52.27%), *Proteus mirabilis* (46.97%), *Pseudomonas aeruginosa* (45.45%), *Enterobacter sp.* (42.41%), and *Proteus morgani* (41.67%) were all gram-negative bacteria that were resistant to antibiotics. Gram-positive bacteria with an average level of resistance include *Staphylococcus aureus* (45.4%) and *Staphylococcus epidermidis* (50.01%) (Tuntun, 2022).

They have observed sulfamethoxazole, chloramphenicol, erythromycin, clindamycin, trimethoprim, and ampicillin were no longer effective for killing bacteria, with resistance rates ranging from 33.3% to 100%. Only three antibiotics, ciprofloxacin against bacteria *Pseudomonas aeruginosa*, *P. vesicularis*, *E. coli*, *Staphylococcus aureus*, and *Staphylococcus epidermidis*, still have 100% efficacy to kill bacteria. *Pseudomonas aeruginosa* was completely resistant to the antibiotics erythromycin

and clindamycin. Trimethoprim-resistant strains of *Proteus mirabilis* and *Yersinia sp.* (Tuntun, 2022).

The antibiotics ceftriaxone, erythromycin, clindamycin, and trimethoprim are all completely ineffective against *E. coli*. A hundred percent resistance to the drugs trimethoprim and clindamycin in *Enterobacter sp.* Meropenem is effective against *Proteus morgani* bacterium, *Klebsiella pneumoniae*, and *Staphylococcus aureus*. *Staphylococcus epidermidis* was completely resistant to the drugs of clindamycin and trimethoprim. Sulfamethoxazole, chloramphenicol, and ceftriaxone were all completely ineffective against *Klebsiella pneumonia*. *Klebsiella pneumoniae* was also found completely resistant to ceftriaxone (Tuntun, 2022). Even earlier studies discovered that *Staphylococcus aureus* was resistant to methycilin (MRSA) (Ekrami et al., 2011).

According to data from World Health Organization (WHO), 87 countries have seen third-generation cephalosporin resistance. Most nations indicate that more than 30% of *Klebsiella pneumoniae* have third-generation cephalosporin resistance; some even report more than 60% (Barai, 2010; WHO, 2014). The WHO report stated that had occurred resistance of *E. coli* to ciprofloxacin up 50% in five countries (WHO, 2014). Resistance *E. coli* to ciprofloxacin increased 5 times higher in 2010 than 2000 in the United States (Davis, 2015). This is contrary to the results research, which found that *E. coli* is still sensitive to ciprofloxacin which was a fluoroquinolone antibiotic (Tuntun, 2022).

In contrary with this study showed that typical bacteria were still sensitive to Amikacin, as is in line with a study carried out by Nurmala from 2011 to 2013 at RSUD Soedarso, Pontianak, Meropenem (82.89%) and Amikacin (76.34%) had the highest antibiotic sensitivity of all the microorganisms analyzed (Nurmala, 2015). Prior research revealed that while most strains of *Klebsiella pneumonia* and *Escherichia coli* that produce ESBL are still susceptible to Amikacin and Meropenem, they are already resistant to third-generation cephalosporins (Hayati, 2019).

According to the study's findings, the antibiotic Amikacin is the most sensitive. A semisynthetic Kanamycin called Amikacin is more resistant to the several enzymes that can break down other Aminoglycosides. Of the Aminoglycoside family, Amikacin possesses the largest breadth of antibacterial activity. Amikacin has a specialized resistance to the enzymes that activate Aminoglycosides and is effective against the majority of Gram-negative aerobic bacilli both outside of hospitals and in them. The majority of the *Serratia*, *Proteus*, and *P. aeruginosa* strains were among

them. In order to prevent the emergence of resistant strains, some hospitals restrict their use. Almost all strains of *Klebsiella*, *Enterobacter*, and *E. coli* that are resistant to Tobramycin and Gentamicin are sensitive to Amikacin (Goodman & Gilman, 2012).

This study conducted some bacteria were resistant to antibiotics. This demonstrates that in order to prevent treatment from being ineffective, antibiotics must be used to treat bacteria that have developed resistance to them. This demonstrates that the issue of resistance is a serious one that requires consideration from all stakeholders in order to be able to prevent and foresee it. Due to extrinsic and intrinsic factors, these Gram-negative bacteria are able to create a self-defense mechanism against antibiotics. Extrinsic variables can include things like overusing antibiotics, using medications at odd times, using the wrong dosage, and giving antibiotics to the wrong people. The existence of a plasmid-mediated intrinsic microbiological factor plasmid-mediated processes are responsible for bacteria's capacity to create metabolites, such as resistance to Trimethoprim and Chloramphenicol (Pelczar and Chan, 1988).

CONCLUSION

Pseudomonas sp, *Enterobacter sp*, *Proteus sp*, *Alcaligenes sp*, *Staphylococcus sp*, *Klebsiella sp*, *E. coli* and *Streptococcus sp*. were resistant to Chloramphenicol, Sulbactam-ampicillin, and Cephalexin had the highest average resistance (98%), followed by Cefadroxil (94%), Cefixime (91%), and Trimethoprim (90%). Most of the bacteria tested were most resistant to Sulbactam-Ampicillin (> 97%) and Penicillin (100%). The majority of the bacteria identified in this study were most sensitive to amikacin (> 92%), with an average sensitivity to amikacin of 89% ((with the exception of *Streptococcus sp.*). Therefore, it can be utilized to increase the prudent use of antibiotics in order to overcome the nosocomial infections.

SUGGESTION

In order to minimizing nosocomial infection, reduce antibiotic resistance, decrease the length of stay and cost-effectiveness of care at H. Abdul Moeloek Hospital, it is hoped that stakeholders who use antibiotics at the hospital will abide by the guidelines for antibiotic use.

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EFFECTIVENESS OF MOTHER SMART ONLINE CLASS ON EARLY DETECTION SKILLS ON CHILD GROWTH

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ABSTRAK : EFEKTIVITAS KELAS ONLINE CERDAS IBU KETERAMPILAN DETEKSI DINI PERTUMBUHAN ANAK

Latar Belakang: Berdasarkan hasil Riskesdas 2013, diketahui 34,3% balita di Indonesia tidak mendapatkan pemantauan tumbuh kembang. Pada masa pandemi, terdapat pembatasan aktifitas berskala mikro yang berdampak ditiadakannya posyandu. Dengan demikian diperlukan suatu metode yang dapat meningkatkan kemampuan ibu untuk memantau pertumbuhan anaknya secara mandiri. Salah satu upaya yang dapat dilakukan adalah membentuk kelas ibu pintar online yang bertujuan untuk meningkatkan keterampilan ibu dalam deteksi dini pertumbuhan balita. Kelas ibu pintar online dipandang paling efektif pada masa pandemi, karena dapat mengurangi kontak fisik.

Tujuan: untuk menganalisis efektifitas Kelas Ibu Pintar Online Terhadap Keterampilan Deteksi Dini Pertumbuhan Balita.

Metode : Desain Penelitian adalah *Quasi eksperimen* dengan pendekatan *pre and post-test design with control group*. Subjek penelitian adalah ibu yang memiliki balita di Kelurahan Cilendek Timur, Kota Bogor, terdiri dari 2 kelompok, yaitu kelompok intervensi dan kelompok kontrol. Sampel penelitian dipilih secara non-random, dengan jumlah 30 orang ibu pada setiap kelompok. Pada kelompok intervensi diberikan pretest, kemudian diberikan edukasi tentang pertumbuhan balita pada kelas online melalui Whatsapp Group. Kegiatan intervensi berlangsung selama 2 minggu, dengan jumlah pertemuan 6 kali. Diakhir pertemuan, dilakukan Post-test pengetahuan dan observasi keterampilan ibu dalam melakukan pemantauan pertumbuhan balita serta menginterpretasikannya. Pada kelompok kontrol, responden diberikan pre test diawal kegiatan dan post tes pada akhir kegiatan. Penelitian dilakukan pada bulan Maret-Oktober 2021. Variabel independent dalam penelitian ini adalah kelas ibu pintar online. Sedangkan variabel independennya adalah keterampilan deteksi pertumbuhan balita. Variabel diukur dengan kuesioner. Analisa data dengan uji mann-whitney

Hasil: didapatkan Sebagian besar responden berpendidikan SMP dan SMA dengan usia antara 20-35 tahun, memiliki anak lebih dari 1 dan tidak bekerja (Ibu Rumah Tangga) dan penghasilan seluruh responden di bawah UMK Kota Bogor. Pendidikan ibu, Usia Ibu, Paritas, Pekerjaan dan Penghasilan tidak berpengaruh terhadap Keterampilan Deteksi Dini Pertumbuhan Balita dengan nilai $P > 0.005$. Terdapat peningkatan Pengetahuan dan Keterampilan ibu pada kelompok intervensi dalam mendeteksi pertumbuhan balita usia 3-5 tahun di Kota Bogor. Terdapat perbedaan rerata pengetahuan dan keterampilan ibu sebelum dan setelah diberikan edukasi melalui kelas ibu pintar online.

Kesimpulan: Kelas Ibu pintar online dapat meningkatkan pengetahuan dan keterampilan ibu dalam mendeteksi pertumbuhan balita usia 3-5 tahun di Kota Bogor.

Saran: Bidan sebagai salah satu tenaga kesehatan yang berperan dalam pemantauan pertumbuhan bayi dan balita perlu memiliki berbagai strategi agar dapat melibatkan peran ibu dalam pemantauan pertumbuhan anak. Salah satu strateginya dalam penelitian ini adalah membuat kelas online. Strategi lain untuk menguatkan kelas online ini bisa dilakukan pendampingan offline dengan tetap memperhatikan proses.

Kata Kunci: Kelas Ibu, Deteksi Dini, Pertumbuhan, anak

ABSTRACT

Background: Based on the results of the 2013 Riskesdas, it is known that 34.3% of toddlers in Indonesia do not receive growth and development monitoring. During the pandemic, there were restrictions on micro-scale activities, resulting in the absence of posyandu. Thus we need a method that can improve the ability of mothers to monitor their child's growth independently. One effort can be made to form an online smart mother class that aims to enhance mothers' skills in the early detection of toddler growth. Online smart mom class is the most effective during a pandemic because they can reduce physical contact.

Purpose: The study aimed to analyze the effectiveness of the Mother Smart Online Class on early detection skills for toddler growth.

Method: The research design is a *quasi*-experimental approach with pre and post-test design with the control group. *The research subjects were mothers who had toddlers* in East Cilendek Village, Bogor City, consisting of 2 groups: the intervention and the control group. The research sample consisted of 30 mothers in each group—chosen non-randomly. The intervention was to educate about toddlers' growth in online classes. The study was conducted in March-October 2021. The independent variable in the study was the Mother Smart Online Class. The independent variable is the skill of detecting toddlers' growth. Variables were measured by questionnaire—analysis of the data using the Mann-Whitney test.

Methods: The research design is a quasi-experimental approach with a pre and post-test design with a control group approach. The research subjects were mothers who had toddlers in East Cilendek Village, Bogor City, consisting of 2 groups: the intervention group and the control group. The research sample was randomly selected non-randomly, with 30 mothers in each group. The intervention group was given a pre-test and then given education about toddler growth in online classes via the Whatsapp Group. The intervention activities lasted for two weeks, with a total of 6 meetings. At the end of the meeting, a post-test of knowledge and observation of mothers' skills was conducted to monitor toddler growth and interpret it. In the control group, first, respondents were given a pre-test and then a post-test at the end of the activity. The research was conducted in March-October 2021. The independent variable in this study was the online smart mom class. At the same time, the independent variable is toddler growth detection skills. Questionnaires measure variables—data analysis with Mann-Whitney test.

Conclusion: Mother smart online class increased the knowledge and skills of mothers in detecting the growth of toddlers aged 3-5 years

Suggestions: Recommendations, Midwives, as one the health workers who have a role in monitoring the growth of infants and toddlers, need to have various strategies to involve the role of mothers in monitoring child growth. One of the strategies in this research is to make online classes. Another strategy to strengthen this online class can be offline mentoring while still paying attention to the progress.

Keywords: Mother's class, early detection, growth, toddlers

INTRODUCTION

Age under five years old (toddler) is a crucial period in the growth process because, in that age range, there is an acceleration of child growth and development (Saurina *et al.*, 2015). The growth and development of children under five are very dependent on parenting. What is meant by parenting includes basic needs like nutrition and stimulation needed so that children can grow and develop optimally (Soetjiningsih and Ranuh, 2013). the size of various body organs; and development is a process of increasing the ability, structure, and function of the body, which is more complex as a result of and maturation of cells (Soetjiningsih & Ranuh, 2013). The optimization of children's growth and development has decreased (Kemenkes RI, 2021). Based on the results of Riskesdas 2013, it is known that 34.3% of children under five in Indonesia are not monitored for growth and development. (Sutardji, Budijanto and Hardhana, 2017) According to WHO's SDG data, in 2013, children under five in Indonesia experienced several growth irregularities, namely 34.6% stunting, 13.5% malnutrition, and 11.5% obesity (WHO, 2017). Meanwhile, in West Java, children aged 0-59 months were known to be malnourished as much as 2.4% of, undernourished,

12.1% of, and 1.3% of children with overnutrition status (Sutardji, Budijanto and Hardhana, 2017).

Toddler growth can be measured through weight gain, height, and head circumference. In connection with mothers' less active role in monitoring their children's growth, efforts are needed to improve the ability of mothers with toddlers to monitor the growth of children under five. Health education delivered can use a variety of media. The media used must be appropriate and adapted to the target conditions because the use of media can affect the absorption and retention of the material delivered. Smartphone technology is an excellent opportunity to be used as a medium in health education activities. From the literature review by Leonita (2018) regarding the role of social media in health promotion efforts, empirical evidence shows that social media is effective in carrying out health promotion efforts to increase understanding and support the community for healthy behaviour (Leonita and Jalinus, 2018).

The Covid-19 pandemic, which began to spread worldwide in early 2020, has impacted various aspects of Indonesia. Since April 2020, various strategies have been implemented to reduce transmission and mortality due to Covid-19.

Likewise, in the health aspect, various adaptations and adjustments can provide the best service to the community during a pandemic. Bogor is one of the cities with a high number of Covid. Even as of October 2020, the Micro-Scale Activity Restriction policy is still being implemented. Health services in communities where large numbers of people gather are suspended indefinitely. Likewise with Posyandu. Of course, the absence of a posyandu impacts monitoring the growth of children under five.

Thus, efforts are needed to improve mothers' knowledge and skills to monitor toddlers' growth safely during this covid pandemic. One of the efforts to improve the skills of mothers in monitoring the growth of toddlers is in the form of online classes. Hasanuddin's (2002) research in Pancarijang showed that online education could increase knowledge and public health behaviour (Hasanuddin and AL, 2022).

The difference between the current research and the previous research lies in the media used in this research; classes are held via WhatsApp media with assistance and monitoring from a facilitator for each class. Classes run according to the modules' stages and plans, and the material used is standard so that it can be duplicated to hold classes elsewhere. (Wahyuni *et al.*, 2022).

Based on the above background, the researcher is interested in researching "The effectiveness of Mother Smart Online Class on early detection skills of toddler growth".

RESEARCH METHODOLOGY

This research is a quasi-experimental study, using a *pre and post-test design approach with a control group*.

Table 1
Research Design

	Pretest	Posttest	Family Class	Online
Class Group (P-1)	01		X	02
Control Group (P-2)	03		-	04

In the previous intervention group, a pre-test was conducted, and the intervention was given via WhatsApp. After the intervention, observations were made. The pre-test and post-test were carried out in the control and intervention groups. The research location was in East Cilendek Village, Bogor City, in January-December 2021. The location was chosen because, in that area, the number of toddlers is significant, and it is a red zone affected by covid.

The target population in this study is mothers of toddlers in the Bogor City area. In comparison, the affordable population is mothers who have toddlers 3-5 years old in East Cilendek Village, Bogor City. The number of samples was 30 people in each intervention and control group—retrieval of research data using a questionnaire that has been tested for validity and reliability. The questionnaire contains

sociodemographic questions and knowledge about children's growth. Data analysis was performed with univariable and bivariable analysis with the Mann-Whitney test.

RESEARCH RESULT

Table 2 shows that most of the respondents have junior high and high school education with ages between 20-35 years. Most respondents have more than one child and do not work (housewives). The income of all respondents is below the regional minimum wage of Bogor City. From the results of the analysis of all characteristic variables, namely maternal education, maternal age, parity, occupation and income, there is no effect on early detection skills of toddler growth with a P value > 0.005

Table 2
Characteristics of Respondents

Variables	Group			P
	Control	Intervention	Total	
Mother's Education				
Elementary	5	5	10	1,000
Junior	11	11	22	
High School	14	14	28	
Mother's Age				
<20	1	1	2	0.998
20-35	22	21	42	
>35	7	8	16	
Parity (Number of Children)				
1	5	6	11	1,000
2	12	13	25	
3	7	8	15	
4	6	3	9	
Employment				
Housewife	17	18	35	1,000
Working	13	12	25	
Income				
< Bogor Minimum Wage (4,196,000)	30	30	60	
> Bogor Minimum Wage (4,196,000)	0	0	0	

*Kolmogorov Smirnov Test

Table 3
Analysis of Maternal Knowledge and Skills Scores Regarding Early Detection of Growth of Toddlers Aged 3-5 Years in Bogor City

Variable	N	Median (Min-Max)	Mean + sb	P
Knowledge Ex. Control				
Pre Test	30	24 (16-26)	23.7 + 2.385	0.739*
Post Test	30	24 (16-26)	23.40 + 2.207	
Knowledge Ex. Intervention				
Pre Test	30	24 (16-26)	23.5 + 2.301	0.000*
Post Test	30	25 (20-28)	25.17 + 1.704	
Skill Post Test				
Intervensi	30	30 (27-30)	29.80 + 2.235	0.000**
Control	30	23.5 (20-25)	23.78 + 1.363	

*Wilcoxon **Mann Whitney

Table 3 shows that in the intervention group, there was an increase in the average value of pre and post-knowledge by 2 points. Based on Wilcoxon data analysis, the increase is assumed to be significant due to the intervention. In the control group, there was an average decrease of 0.3 points in the post-

test knowledge value, with a p-value > 0.05, so there was no significant change in the knowledge of the control group both in the pre-test and post-test. In the skill score, there were differences in the intervention and control groups, with a P value of < 0.005.

Table 4
Analysis of Differences in Knowledge and Skills of Mothers Before and After Being Educated Through Online Smart Mothers Class

Group	N	Median (Min-Max)	Mean + sb	P
Knowledge of				
Intervention	30	25 (20-28)	25.17 + 1.704	0.001*
Control	30	24 (16- 26)	23.40 + 2.207	
Skills				
Intervention	30	30 (27-30)	29.80 + 2.235	0.000*
Control	30	23.5 (20-25)	23.78 + 1.363	

*Mann Whitney Test

In the post-test knowledge score, the mean score in the intervention group was 2 points higher than the control group's value; statistically, the change was significant with a p-value of < 0.05. In the post-test skill scores, the average value was 3 points higher in the intervention group, and the change was statistically significant with a p-value of p < 0.05.

DISCUSSION

Table 2 shows that maternal education, age, parity, occupation and income do not affect early detection skills of toddler growth. In this study, maternal education, age, parity, occupation and income did not affect early detection skills of toddler growth because many parents or mothers hand over their child's growth monitoring to health workers such as midwives, paediatricians, general practitioners or health facilities such as Posyandu, Puskesmas or Hospitals. Due to the COVID-19 pandemic, the implementation of monitoring activities for children's growth and development has been limited. According to research by Saraswati (2021), cadres can overcome this problem by providing home-based posyandu services (mobile posyandu). (Saraswati, 2021) Another solution in this study is to train mothers in online classes to ensure every mother has skills in caring for and detecting her child's growth. The knowledge and stimulation skills possessed by the mother will affect the child's development (Hastuti *et al.*, 2009) Pitchik *et al.*, 2018)(UNICEF, 2021).

Table 3 shows that in the intervention group, there was an increase in the average pre- and post-knowledge value. In the skill scores, there were differences in the scores of the intervention and control groups. In this study, the intervention carried out was to provide training in online classes through *Whatsapp Groups* with the aim that each mother had skills in caring for and detecting the growth of her children. After the respondent was given the intervention, the respondent was observed for his skills in monitoring the growth and development of

the child. The result is an increase in the knowledge and skills of mothers in detecting child growth. The results of this study follow the results of Wahyuni's research on online education, which showed an increase in the average knowledge of 2.9 points in Tegal village and 3.4 points in Jampang village after being given online education (Wahyuni *et al.*, 2022).

This study's results align with Leonita's (2018) statement that social media can increase public access to health information and promote positive behaviour change. (Leonita and Jalinus, 2018) Thus, social media can collaborate and complement conventional health promotion. Social media can be a powerful tool with broad reach and interactivity. Some empirical evidence finds exciting things to using social media for disease prevention interventions, such as smoking cessation through Tweets and health sites, YouTube videos about cancer, increasing adolescent knowledge about reproductive health, patient knowledge about diabetes and understanding about fitness and physical activity through Facebook.

In this era of increasingly modern information and communication technology, health promotion efforts are innovating by using digital strategies focusing on the young population who actively uses gadgets. Many conveniences are obtained in meeting the community's needs, such as through mobile phones (*smartphones*). Several hospitals and even health centres have taken advantage of advances in digital technology and are increasingly actively using social media as a tool for health promotion. The need for accurate, precise, and up-to-date information is increasingly needed along with the rapid development of information technology, especially in the health sector. Social media through the internet has great potential to carry out health promotion and other health interventions, and it is easier to reach targets at every level. (Leonita and Jalinus, 2018)

The *smartphones* technology is an excellent opportunity to be used as a medium in health

education activities. From the literature review by Leonita (2018) regarding the role of social media in health promotion efforts, empirical evidence shows that social media is effective in carrying out health promotion efforts to increase understanding and support the community for healthy behaviour. (Leonita and Jalinus, 2018) Thus, in this study, using smartphones (digital) to form online classes can be recommended as a means of health promotion or health education to increase the knowledge and skills of mothers to detect child growth. This early detection skill is vital for mothers as primary caregivers to optimize the growth and development of their children (Lucas, Richter and Daelmans, 2018)(Nuriyanto, Rahayuati and Lukman, 2022)(Wina, 2012)(Riyadi *et al.*, 2011)(Setiyati, Sukei and Esyuanani, 2016)(Nabilah, Hastuti and Lathifah, 2021)(Nahar *et al.*, 2012).

In Table 4, the online classroom intervention has a significant effect in increasing the knowledge and skills of respondents. In this study, the media used was an online class through a WhatsApp group where the senses used to add information (knowledge) were the senses of sight and hearing. (Pereira *et al.*, 2020) Although only two senses are involved, information can be appropriately conveyed with the right strategy. The research result in Pancarijang found that online education can improve public health knowledge and behaviour (Hasanuddin and AL, 2022). Health education must follow technological advances in order to obtain optimal results. The results of other studies also show that using digital media can improve the language development of children aged 3-5 years (Operto *et al.*, 2020)(Susilo, 2019).

Mothers' ability to screen children's growth can be done using various media, one of which is through flyer media; this is following the results of research by Nurfurqoni *et al.* in Bogor, which showed that education through flyers could improve mothers' skills. (Nurfurqoni, Nuryati and Fitria, 2019) Likewise with print media in the form of educational fans (Nuryati *et al.*, 2021). However, it is unfortunate that the media is challenging to use during the pandemic. So we need other educational media that are more appropriate. It is crucial to increase maternal knowledge through various effective educational media. This is important because, according to the results of Syahailatua's research, increasing mothers' knowledge about growth and development is related to the growth and development of toddlers. (Syahailatua and Kartini, 2020)

Indonesia is one of the countries with the most WhatsApp users and the highest number of hours of

use. Thus WhatsApp is familiar to respondents and fun to use. In such a situation, delivering information using WhatsApp becomes easily accessible. Several studies comparing online learning media (WhatsApp and conventional/offline face-to-face) found no significant difference. In the study in Turkey in 2020, it was found that there was no difference in the level of knowledge after the intervention between the intervention group (WhatsApp online class) and the control group (offline). they involved the visual, audio and motor body (Gonenc, 2020). Several research results show that online and digital media also increase people's knowledge and behaviour in various aspects. (Hasanuddin and AL, 2022)(Chandra, 2021)(Fatima, Hastuti and Riany, 2020)(Pereira *et al.*, 2020)(Tandilangi, Mintjelungan and Wowor, 2016). However, WhatsApp online classes also have the advantage that they are easy to access, can be opened anywhere, and can be repeated, so in the end, WhatsApp online classes are also effective in increasing the knowledge and skills of respondents. Education through this online class can be carried out, but it depends on how the facilitator builds communication in the class. For the health message to be delivered properly, the mass communication must adapt to the respondent's background (Nurfurqoni, 2013).

CONCLUSION

Most respondents have junior high and high school education and are between the ages of 20 and 35. Most respondents have more than one child and do not work (housewives). The income of all respondents is below the regional minimum wage of Bogor City. Mother's education, maternal age, parity, occupation and income affect early detection skills of toddler growth with a P value > 0.005. There is an increase in the knowledge and skills of mothers in the intervention group in detecting the growth of toddlers aged 3-5 years in Bogor City. There is a difference in mothers' average knowledge and skills before and after being educated through the online smart mother class. One of the strategies in this research is to make online classes. Another strategy to strengthen this online class can be offline mentoring while still paying attention to the progress.

SUGESSTIONS:

Recommendations, Midwives, as one the health workers who have a role in monitoring the growth of infants and toddlers, need to have various strategies to involve the role of mothers in monitoring child growth. One of the strategies in this research is to make online classes. Another strategy to

strengthen this online class can be offline mentoring while still paying attention to the progress

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ENDORPHIN MASSAGE AGAINST PAIN INTENSITY AND ANXIETY LEVELS IN PRIMIGRAVIDA MATERNITY MOTHERS DURING 1 ACTIVE PHASE

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ABSTRAK : PIJAT ENDORPHIN TERHADAP INTENSITAS NYERI DAN TINGKAT KECEMASAN PADA IBU BERSALIN PRIMIGRAVIDA SELAMA 1 TAHAP AKTIF

Latar Belakang : Proses persalinan identik dengan rasa nyeri yang akan dialami. Ibu hamil sering merasa cemas dan khawatir tentang rasa nyeri yang akan mereka alami saat melahirkan dan akan bereaksi untuk mengatasi nyeri dan kecemasan tersebut.

Tujuan : Penelitian ini untuk mengetahui pengaruh *Endorphin Massage* terhadap intensitas nyeri dan tingkat kecemasan pada ibu bersalin primigravida kala 1 fase aktif pada kelompok intervensi dan kelompok kontrol.

Metode : Desain penelitian Eksperimen semu (*Quasi Eksperimental*) ini menggunakan rancangan *Pre-test Post-test Two Group Design*. Populasi dari penelitian ini berjumlah 40 responden ibu bersalin primigravida kala 1 fase aktif. Sampel penelitian 20 responden kelompok intervensi dan 20 responden kelompok kontrol dengan *Purposive Sampling*. Instrumen penelitian berupa Kuesioner dan alat ukur *Numerik Rating Scale (NRS)* dan *Hamilton Anxiety Rating Scale (HARS)*. Distribusi data sudah dilakukan uji normalitas dengan hasil data terdistribusi normal. Analisis data dengan pengujian hipotesis menggunakan uji t- test Independent dan uji paired simple t- test.

Hasil : Penelitian menunjukkan ada perbedaan yang signifikan rata-rata intensitas nyeri dan tingkat kecemasan antara ibu bersalin primigravida kala 1 fase aktif yang diberikan *Endorphin Massage* dan yang tidak diberikan *Endorphin Massage* pada ibu bersalin sebesar 0,000 ($p < 0.05$).

Kesimpulan : Ada pengaruh pemberian metode *endorphin massage* terhadap intensitas nyeri dan tingkat kecemasan pada ibu bersalin primigravida kala 1 fase aktif untuk menekan rasa sakit dan kecemasan ibu bersalin.

Saran : Diharapkan dapat memotivasi tenaga kesehatan untuk menggunakan atau mengkombinasikan terapi farmakologi maupun non farmakologi dapat digunakan sebagai salah satu bentuk intervensi dalam memberikan asuhan kebidanan secara komprehensif salah satunya metode *Endorphin Massage*

Kata Kunci : *Endorphin Massage*, nyeri, kecemasan, persalinan.

ABSTRACT

Background: The process of childbirth is identical to the pain that will be endured. Pregnant women often feel anxious and worried about the pain they will experience during childbirth and will react to deal with the pain and anxiety.

Purpose: This study was to determine the effect of *Endorphin Massage* on pain intensity and anxiety levels in primigravida maternity mothers in active phase 1 in the intervention group and the control group.

Methods: This quasi-experimental (quasi-experimental) research design uses a *Pre-test Post-test Two Group Design*. The population of this study amounted to 40 respondents who gave birth to primigravida in the first active phase. The research sample was 20 respondents in the intervention group and 20 respondents in the control group using purposive sampling. The research instruments were questionnaires and measuring instruments, the *Numerical Rating Scale (NRS)* and *Hamilton Anxiety Rating Scale (HARS)*. The distribution of the data has been tested for normality with the results of the data being normally distributed. Data analysis by hypothesis testing using Independent t-test and paired simple t-test.

Results: The study showed that there was a significant difference in the average pain intensity and anxiety level between primigravida mothers in active phase 1 who were given *Endorphin Massage* and those who were not given *Endorphin Massage* were 0.000 ($p < 0.05$).

Conclusion: There is an effect of giving the endorphin massage method on the intensity of pain and anxiety levels in primigravida maternity mothers in active phase 1 to suppress pain and anxiety in childbirth.

Suggestion: It is hoped that it can motivate health workers to use or combine pharmacological and non-pharmacological therapies that can be used as a form of intervention in providing comprehensive midwifery care, one of which is the Endorphin Massage method.

Keywords: Anxiety, Childbirth, Endorphin Massage, Pain,

INTRODUCTION

Childbirth is the process by which the baby, placenta and amniotic membrane come out of the mother's uterus, normal delivery occurs at a gestational age of enough months / after gestational age of 37 weeks or more without complications. At the end of pregnancy the mother and fetus prepare themselves to face the labor process. The fetus grows and develops in the process of preparation for life outside the womb (Fauziah, 2017). The process of childbirth is synonymous with the pain that will be lived. Pregnant women often feel anxious and worried about the pain they will experience during childbirth and will react to overcome the pain. Labor pain during 1 primigravida occurs due to the process of cervical changes (thinning and dilatation), uterine ischemia, as well as a decrease in the lowest part of the fetus. The labor process experienced is the first experience that causes anxiety and fear to aggravate pain (Syaiful and Fatmawati, 2020).

The majority of primigravida respond to pain with fear and anxiety resulting in the activity of the sympathetic nervous system, as well as increasing the secretion of catecholamines (epinephrine and norepinephrine). This hormone can cause the occurrence of smooth muscle tension and vasoconstriction of blood vessels. So it can result in a decrease in uterine contractions, a decrease in uteroplacental circulation, a reduction in blood and oxygen flow to the uterus, as well as the onset of uterine ischemia that makes pain impulses multiply. As well as causing disturbances in the strength of the uterus so that uterine inertia occurs. If not overcome, it will cause the occurrence of old partus, which can cause complications in the mother and fetus including maternal death and asphyxia in the fetus (Syaiful and Fatmawati, 2020).

Pain during childbirth can cause blood pressure to increase and the mother's concentration during childbirth to be disturbed, it is not uncommon for pregnancy to bring "stress" or worry / anxiety that has an impact and influence on the physical and psychic, both on the mother and on the fetus she contains. For example, resulting in physical disability and deterioration of intelligence as well as

mental emotional pain and excessive pain will cause anxiety. Excessive anxiety also adds to pain (Syaiful and Fatmawati, 2020). Excessive anxiety also adds to pain (Syaiful and Fatmawati, 2020). With a high level of anxiety and not in line with life, if it lasts continuously for a long time there can be fatigue causing death (Mardjan, 2016).

According to the World Health Organization (WHO) the results of research in the United States show that 70% to 80% of patients expect the delivery to take place painlessly. Currently in developing countries 20% to 50% of deliveries in hospitals are carried out with Sectio caesaria (SC) (Alam, 2020). Based on the health profile in 2019 the number of maternal deaths according to West Java Province in 2018-2019 there was a decrease from 4,226 to 4,221 maternal deaths in Indonesia, In 2019 the most common causes of maternal death were bleeding (1,280 cases), hypertension in pregnancy (1,066 cases), infection (207 cases) (Ministry of Health R.I, 2020). The number of maternal deaths in 2019 based on the reporting of the District/City Health Profile in West Java Province was 684 cases or 74.19 per 100,000 Live Births, a decrease of 16 cases compared to 2018, which was 700 cases. The cause of maternal death is still dominated by 33.19% bleeding, 32.16% hypertension in pregnancy, 3.36% infections, 9.80% circulatory system (heart) disorders, 1.75% % metabolic disorders and 19.74% other causes. Based on the Bekasi City Health Profile, the maternal mortality rate (MMR) in 2019 was 22 per 100,000 Live Births (Dinkes Jawa Barat 2019).

One way to reduce the Maternal Mortality Rate (MMR) is through the maternal affection movement which is an aspect of the 5 common threads to help mothers feel safe and comfortable during the delivery process. The application of maternal care during period 1 that can be done is family assistance, relaxation, breathing, nutritional diet and movement / position change. Various efforts were made to overcome labor pain, namely nonpharmacologically. In the form of alternatives, one of which is Massage, can increase body relaxation and reduce stress, besides that massage is an effective, safe, simple and does not cause

adverse effects on both the mother and the fetus (Kurniati, 2017).

One of the ways of nonpharmacological management to overcome labor pain and anxiety can be done with the Endorphin Massage method (Alam, 2020). Endorphin Massage is a touch technique as well as a light massage, which can normalize heart rate and blood pressure, as well as improve the relaxed condition in the pregnant woman's body by triggering a feeling of comfort through the surface of the skin. An obstetrician, Constance Palinsky, was moved to use endorphins to reduce or relieve pain in mothers who are about to give birth (Deswani et al., 2018).

Research conducted previously by Leny and Machfudloh (2017) "Endorphin Massage Therapy To Reduce Pain Intensity During 1 Active Phase of Labor" that the Endorphin Massage method is able to reduce the intensity of pain during 1 active phase. And respondents felt the change after the massage was more relaxed and more comfortable. One of the ways of nonpharmacological management to overcome labor pain and anxiety can be done with the Endorphin Massage method (Alam, 2020). Endorphin Massage is a touch technique as well as a light massage, which can normalize heart rate and blood pressure, as well as improve the relaxed condition in the pregnant woman's body by triggering a feeling of comfort through the surface of the skin. An obstetrician, Constance Palinsky, was moved to use endorphins to reduce or relieve pain in mothers who are about to give birth (Deswani et al., 2018). Research conducted previously by Leny and Machfudloh (2017) "Endorphin Massage Therapy To Reduce Pain Intensity During 1 Active Phase of Labor" that the Endorphin Massage method is able to reduce the intensity of pain during 1 active phase. And respondents felt the change after the massage was more relaxed and more comfortable.

Based on the results of the preliminary survey, from the results of interviewing 3 midwives at rsud dr. Chasbullah A.M Kota Bekasi, it turns out that no one has ever given Endorphin Massage therapy to maternity mothers, especially in primigravida maternity mothers during 1 active phase.

Based on this background, researchers are interested in conducting research on "The Effect of Endorphin Massage on Pain Intensity and Anxiety Levels of Primigravida Maternity Mothers During 1 Active Phase at Dr. Chasbullah A.M Hospital, Bekasi City in 2021

RESEARCH METHODOLOGY

The research design in this study is Quasi Experimental (Quasi Experimental). With the Pre-test Post-test Two Group Design approach, it uses two groups that will be the subject of the study, one is given an intervention (experimental group) and the other is not given an intervention (control group).

The group that was the subject of the study (respondents) was maternity mothers who experienced pain and anxiety at the time of going into labor and were given Endorphin Massage. And respondents took measurements of pain scales & anxiety levels before being given an intervention (Pre-test). Respondents were given an Endorphin Massage intervention for 15 minutes and then a maternal pain & anxiety scale was measured (Post-test).

Sampling of 40 samples was carried out by purposive sampling by determining samples according to the criteria of inclusion and exclusion. The instruments used in this study were in the form of questionnaires and measuring instruments Numerical Rating Scale (NRS) and Hamilton Anxiety Rating Scale (HARS).

Research analysis consists of univariate and bivariate analysis, before hypothesis testing is carried out a normality test which is one of the test requirements for data analysis. To find out the distribution of data has a normal distribution or not. Normality test with one sample kolmogrov-smirnov method was used for data size samples of 20-1000 samples (Gunawan, 2018). If the data is normally distributed, an independent parametric t-test and a paired sample t-test are used.

RESULTS AND DISCUSSION

Univariate Analysis

Univariate analysis was performed to determine the average value of pain and anxiety intensity in primigravida maternity mothers during 1 active phase before and after endorphin massage administration in the intervention group and control group

Based on Table 1, it is known that the average value of maternal pain intensity before endorphin massage was given in the intervention group was 6.60, with the lowest pain value of 4 and the highest pain value of 10. The average value of maternal pain intensity after endorphin massage was given in the intervention group was 5.15, with the lowest pain value of 3 and the highest pain value of 9 with a mean difference of -1.45. Meanwhile, the average value of maternal pain intensity before being given intervention in the control group was 6.65, with the lowest pain value

of 4 and the highest value of 9. The average value of maternal pain intensity after in the control group

was 6.30, with the lowest pain value of 3 and the highest value of 9 with a mean difference of -0.35.

Tabel 1

Average Distribution of Pain Intensity in Primigravida Maternity Mothers During 1 Active Phase Before and After Endorphin Massage Administration in Intervention Groups and Control Groups

Intensitas Nyeri	Pre-Test			Post-Test			Selisih
	Mean	Min	Max	Mean	Min	Max	Mean
Intervensi	6,60	4	10	5,15	3	9	-1,45
Kontrol	6,65	4	9	6,30	3	9	-0,35

Tabel 2

Average Distribution of Anxiety Levels In Primigravida Maternity Mothers During 1 Active Phase Before and After Administration of Endorphin Massage In Intervention Groups and Control Groups.

Tingkat Kecemasan	Pre-Test			Post-Test			Selisih
	Mean	Min	Max	Mean	Min	Max	Mean
Intervensi	35,15	20	51	27,60	16	41	-7,55
Kontrol	36,50	25	55	35,40	20	53	-1,1

Based on Table 2. It was found that the average value of the anxiety level of maternity mothers before being given endorphin massage in the intervention group was 35.15, with the lowest anxious score of 20 and the highest anxious value of 51. The average value of the anxiety level of maternity mothers after being given endorphin massage in the intervention group was 27.60, with the lowest anxious value of 16 and the highest anxious value of 41 with a mean difference of -7.55. Meanwhile, the average value of the anxiety level of maternity mothers before being given intervention in the control group was 36.50, with the lowest anxious score of 25 and the highest score of 55. The average value of the anxiety level of maternity mothers after in the control group was 35.40, with the lowest anxious score of 20 and the highest value of 53 with a mean difference of -1.1

Pain can stimulate the respiratory system and cause periods of hyperventilation, if oxygen administration is not adequate it can cause hypoxemia of the mother and fetus (Rehatta et al, 2019). Labor pain, anxiety and stress increase the release of gastrin and inhibit gastrointestinal motility and reflex urination, which leads to an increase in the volume and acidity of the stomach. When feeling anxious the individual feels discomfort or fear, in the process of anxiety a person experiences physiological changes in his body, such as trembling, sweating, increased heart rate, as well as followed by psychological changes, such as panic, tension, confusion and difficulty concentrating (Hidayat, 2021).

The results of this study are in line with the research conducted by Leny and Machfudloh (2017) "Endorphin Massage Therapy to Reduce the Intensity of Pain During 1 Active Phase of Labor" showed that out of 20 respondents some experienced very pain and severe pain before doing Endorphin Massage as many as 19 people (95%), after Endorphin Massage decreased to moderate pain as many as 14 people (70%) and 3 people (15%) experienced a decrease from a very painful scale to severe pain, and there were 3 people (15%) who did not experience changes (severe pain). That the endorphin massage method is able to reduce the intensity of pain during 1 active phase. And respondents felt the change after the massage was more relaxed and more comfortable.

According to the respondent's statement before being given endorphin massage therapy respondents had difficulty sleeping, palpitations, sweating due to feeling labor pains. Mom will feel more restless, uncomfortable and traumatized. Pain and anxiety will increase until the labor process takes place. Labor pain is personal because everyone perceives different pains against the stimulus depending on the pain threshold they have. Based on the assumptions of endorphin massage researchers are very effective for treating pain and anxiety at the time of delivery. Maternity mothers need to prepare from pregnancy to delivery so that mothers can distract from pain and anxiety, by adjusting their breath and relaxing. Thus the pain and anxiety will be resolved so that it is unsustainable and getting heavier which can affect

the physical and psychological aspects of the mother and fetus.

Bivariate Analysis

Tabel 3

Average Difference in Endorphin Massage Against Pain Intensity and Anxiety Levels of Primigravida Maternity Mothers During 1 Active Phase After In Intervention Groups and Control Groups.

Variabel	Mean	SD	Std. Error Mean	P-Value	Mean Difference
Nyeri (post-test) Intervensi	5,15	2,059	0,460	0,085	-1,150
Nyeri (post-test) Kontrol	6,30	2,055	0,459		
Kecemasan (post-test) Intervensi	27,15	8,816	1,971	0,011	-8,250
Kecemasan (post-test) Kontrol	35,40	10,520	2,352		

Based on Table 3. It is known that the average (mean) pain intensity score (Post-Test) of the intervention group was 5.15, for the control group it was 6.30. Descriptively, statistics can be concluded that there was a slight difference in the pain outcomes of the intervention group with controls. Based on the value of Sig. Levene's Test for Equality of Variances of 0.912 > 0.05. The value of Sig. (2-tailed) was 0.085 < 0.05 then in the independent sample t-test it can be concluded that H₀ is rejected and H_a is accepted. There was a significant (noticeable) difference between the post-test maternal maternity pain in the intervention group and the control group. Mean Difference of -1.150 difference between mean post-test pain in the intervention group with control group of 5.15 minus 6.30 = -1.150 and difference of -2.467 to 0.167 (95% Confidence Interval of the Difference Lower Upper

The average (mean) anxiety level score (Post-Test) of the intervention group was 27.15, for the control group of 35.40. Descriptively statistics can be concluded there is a difference in the average anxiety outcomes of the intervention group with the controls. Based on the value of Sig. Levene's Test for Equality of Variances of 0.124 > 0.05. The value of Sig. (2-tailed) of 0.011 < 0.05 then it can be concluded that H₀ is rejected and H_a is accepted. There was a significant (noticeable) difference between the post-test of maternity anxiety in the intervention group and the control group. Mean Difference of -8.250 difference between mean post-test anxiety in the intervention group with the control group of 27.15 minus 35.40 = -8.250 and difference of -14.463 to -2.037 (95% Confidence Interval of the Difference Lower Upper). The average (mean) anxiety level score (Post-Test) of the intervention group was 27.15, for the control

group of 35.40. Descriptively statistics can be concluded there is a difference in the average anxiety outcomes of the intervention group with the controls. Based on the value of Sig. Levene's Test for Equality of Variances of 0.124 > 0.05. The value of Sig. (2-tailed) of 0.011 < 0.05 then it can be concluded that H₀ is rejected and H_a is accepted. There was a significant (noticeable) difference between the post-test of maternity anxiety in the intervention group and the control group. Mean Difference of -8.250 difference between mean post-test anxiety in the intervention group with the control group of 27.15 minus 35.40 = -8.250 and difference of -14.463 to -2.037 (95% Confidence Interval of the Difference Lower Upper).

This is in accordance with the theory of Aprillia (1017) that Endorphin massage therapy can secrete endorphin hormones that serve to increase comfort and reduce pain. This massage can stimulate the body to release endorphin compounds which are pain relievers and can create a feeling of comfort. There are several benefits of this endorphin massage such as: regulating growth and sex hormones, controlling persistent pain and pain, controlling feelings of frustration and stress, improving the immune system.

The results of this study are in accordance with the results of Arianti and Restipa's (2019) research on "The Effect of Endorphin Massage on the Anxiety Level of Primigravida Mothers" showing that the average value of the level of anxiety in the experimental group was 0.667 while the average level of anxiety in the control group was 0.267. Stated that the average level of anxiety in the experimental group was higher than the average level of anxiety in the control group.

This research is the same as the research of Maesaroh et al., (2019). About "The effect of

endorphin massage on the anxiety level of multipara maternity mothers 1". That there was a decrease in the average anxiety level of multipara maternity mothers during the 1st active phase before and after being given endorphin massage was from 13.71 to 5.21 which means from mild anxiety levels close to moderate to no anxiety close to mild anxiety. The p -value < 0.05 means that H_a is accepted. There is an influence between the level of anxiety of multipara maternity mothers during the

1st active phase before and after being given endorphin massage in the Work Area of the Rantau Tijing Kecamatan Pugung Puskemas, Tanggamus Regency in 2019.

Based on the researcher's assumption that the endorphin massage technique can also give individuals self-control when there is discomfort or anxiety, physical and emotional stress caused by excessive pain and anxiety.

Table 4
Paired Sample T-Test Results Effect of Endorphin Massage Method on Pain Intensity in Primigravida Maternity Mothers During 1 Active Phase Before and After at dr. Chasbullah A.M Bekasi City Hospital in 2021

Pair 1	Mean	Paired Differences			t	Sig. (2-tailed)
		SD	Std. Error Mean	Mean Difference		
Pre-Test	6,60	0,605	0,135	1,450	6,085	0,000
Post-Test	5,15					

Based on Table 4. The results of statistical analysis using the Paired Sample T-Test obtained a difference index difference index (t) calculated large 6.085 with a Sig, (2-tailed) value of $0.000 < 0.05$ then H_0 was rejected and H_a was accepted. It can be concluded that there is an average difference between the results of the pain pre-test and the post-test. This means that there is an influence of endorphin massage pain intensity in primigravida maternity mothers during 1 active phase. The Mean Paired Differences value of 1.450 is the average difference between the endorphin massage results against the pre-test with a post-test of 6.60 minus 5.15 = 1.45 and the difference between 1.167 and 1.167.

In accordance with the theory of Aprillia (2010) when you feel the pain of hormone stress will be aroused out and flow through the body naturally the body will release endorphin hormones, pain relief hormones or natural pain killers that are able to cause a sense of comfort and relaxation.

The results of this study are in accordance with the research of Khasanah and Sulistyawati (2020) on "The Effect of Endorphin Massage on

Pain Intensity in Maternity Mothers" that the results of statistical tests analyzing the effect of endorphin massage on the intensity of labor pain obtained a significant value of 0.000 ($P < 0.05$), namely the effect of endorphin massage on reducing pain intensity in mothers at time 1

Similarly, the results of a study by Leny and Machfudloh (2017) "Endorphin Massage Therapy to Reduce Pain Intensity During 1 Active Phase of Labor" showed that there was an influence of endorphin's massage therapy on the intensity of pain during the 1 active phase of labor, namely obtaining results of $p < 0.05$, namely $p = 0.004$, concluded the intensity of pain respondents before endorphin massage experienced severe pain, and respondents who were done endorphin massage experienced moderate pain.

Based on the researchers' assumption, endorphin massage therapy is very safe to give to patients who experience labor pain, which can suppress pain and discomfort by doing a gentle touch on the mother's body for 15 minutes so that it is effective for overcoming the pain.

Table 5
Paired Sample T-Test Results Effect of Endorphin Massage Method on Anxiety Levels in Primigravida Maternity Mothers During 1 Active Phase Before and After at dr. Chasbullah A.M Hospital, Bekasi City in 2021

Pair 1	Mean	Paired Differences			t	Sig. (2-tailed)
		SD	Std. Error Mean	Mean Difference		
Pre-Test	35,15	5,549	1,241	7,550	10,722	0,000
Post-Test	27,60					

Based on Table 5. The results of statistical analysis using Paired Sample T-Test obtained an index of difference index difference (t) calculated large 10,722 with a Sig, (2-tailed) value of $0.000 < 0.05$ then H_0 was rejected and H_a was accepted. It can be concluded that there is an average difference between the results of the anxiety pre-test and the post-test. This means that there is an influence of endorphin massage anxiety levels in primigravida maternity mothers during 1 active phase at dr. Chasbullah Hospital, Bekasi City, A.M. Bekasi City in 2021. The Mean Paired Differences value of 7,550 is the average difference between the results of endorphin massage against the pre-test with a post-test of 35.15 minus $27.60 = 7.55$ and the difference between 4.953 and 10.147.

In accordance with the theory of Aprillia (2017) endorphin massage aims to stimulate the production of endorphin hormones that serve to increase comfort and reduce pain. With touch and massage that stimulates the body to release endorphin compounds which are pain relievers and can create a feeling of comfort.

The results of this study are in accordance with the research of Arianti and Restipa (2019) on "The Effect of Endorphin Massage on the Anxiety Level of Primigravida Mothers" shows that the Paired Sample T-Test test. Based on the t-test, a significant p-value of 0.003 ($p < 0.05$) was obtained so that the hypothesis in this study was accepted. This means that there was a significant level of anxiety in the experimental group before and after being given endorphine massage

This study is in accordance with Meihartati and Mariana's (2018) research on "The Effectiveness of Endorphin Massage Against The Anxiety Level of Primipara Kala Maternity Mothers 1 Active Phase" stated that the results of the study with the Wilcoxon test obtained a p-value of < 0.05 (0.003) meaning that there is an effectiveness of endorphin massage on the anxiety level of active phase primiparous mothers. Based on the assumptions of researchers, pregnant women need to gain knowledge about the endorphin massage method in preparing for the delivery process. With a touch and a smooth and gentle massage towards the moment of delivery can give the mother a calming and comfort effect. And can make heart rate and blood pressure normal so that mothers feel more relaxed.

CONCLUSION

Based on the results of data analysis, researchers can draw several research conclusions

as follows: there is an effect of giving endorphins massage before and after of $0.000 < 0.05$ on the intensity of pain and anxiety levels of primigravida maternity mothers during 1 active phase at dr. Chasbullah A.M Hospital, Bekasi City in 2021.

SUGGESTION

Endorphin Massage. Advice for pregnant women is expected to add information about the importance of the Endorphin Massage method to reduce the intensity of pain and anxiety levels during the delivery process, so that maternity mothers can undergo childbirth relaxed, comfortable and calm without excessive pain and anxiety, one of which is the Endorphin Massage method.

And for health workers, it can be motivating to use or combine pharmacological and non-pharmacological therapies that can be used as a form of intervention in providing comprehensive obstetric care. For health workers to master various kinds of other non-pharmacological therapies, one of which is to reduce pain and anxiety in maternity mothers during the 1st active phase by providing Endorphin Massage therapy

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GIVING MORINGA LEAF ESSENCE TO ADD HEMOGLOBIN LEVELS IN FEMALE ADOLESCENTS: SYSTEMATIC REVIEW

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ABSTRAK : PEMBERIAN ESENSI DAUN KELOR UNTUK MENAMBAH KADAR HEMOGLOBIN PADA REMAJA PEREMPUAN: SYSTEMATIC REVIEW

Latar Belakang: Anemia lebih sering terjadi pada remaja khususnya pada negara berkembang dan kekurangan zat besi merupakan penyebab paling utama yang memengaruhi 50% anemia pada perempuan. Daun kelor mengandung zat gizi makronutrien dan mikronutrien yang tinggi dan dapat meminimalkan risiko anemia.

Tujuan: Mengetahui pengaruh ekstrak daun kelor dalam meningkatkan kadar hemoglobin pada remaja perempuan.

Metode: *Systematic review* dicari menggunakan lima database elektronik (PubMed, ScienceDirect, Willy, EBSCO dan PMC) dan layanan pencarian google scholar. *Systematic review* ini menggunakan PRISMA *checklist* sebagai acuan dan menggunakan *checklist Joanna Briggs Institute (JBI)* untuk menilai kualitas studi. Judul, abstrak, *full text*, dan metodologi dinilai untuk kelayakan studi. Dilakukan tabulasi data dan analisis narasi temuan studi. Ditentukan 9 studi yang memenuhi kriteria untuk dilakukan analisis.

Hasil: Keseluruhan studi menyatakan bahwa ada peningkatan rata-rata kadar hemoglobin setelah diberikan intervensi ekstrak daun kelor, meskipun ada beberapa tidak secara lengkap menjelaskan dosis yang digunakan. Sementara ini belum ada riset mengenai efek samping penggunaan daun kelor.

Kesimpulan: Kesimpulan riset ini terdapat pengaruh ekstrak daun kelor dalam meningkatkan kadar hemoglobin pada remaja perempuan.

Saran: Diharapkan bagi orang tua yang memiliki anak remaja perempuan menyediakan makanan dengan bahan dasar daun kelor untuk memenuhi kebutuhan gizi agar tidak terjadi ataupun mengobati anemia pada remaja perempuan.

Kata Kunci : Daun Kelor, Kadar Hemoglobin, Remaja Perempuan

ABSTRACT

Background: Anemia is more common in teenagers, especially in underdeveloped countries, and iron deficiency is the leading cause of anemia in women, accounting for half of all cases. Moringa leaves are high in macronutrients and micronutrients, which can help to reduce the risk of anemia.

Purpose: The goal of this study was to see if Moringa leaf extract may help adolescent girls increase their hemoglobin levels.

Methods: Five electronic databases (PubMed, ScienceDirect, Willy, EBSCO, and PMC) and Google Scholar as search engines were applied to find systematic reviews. The PRISMA checklist was used as a guide for this systematic review, and the Joanna Briggs Institute (JBI) checklist was used for assessing the study's quality. The feasibility of the study was affected by reviewing the title, abstract, full text, and methodology. Data tabulation and narrative analysis are needed to analyze the research findings. Nine studies could have answered the criteria for analysis.

Results: Although some studies did not fully explain the dose used, all of them declared an increase in the average hemoglobin level after being given the intervention of Moringa leaf extract. Meanwhile, no research was about the effects of using Moringa leaves.

Conclusion: The study concluded that Moringa leaf extract affects increasing hemoglobin levels in adolescent girls.

Suggestions; Parents of adolescent girls expect to provide food containing the main ingredients of Moringa leaves to fulfill nutritional needs to prevent or treat anemia.

Keywords : Moringa Leaves, Hemoglobin Levels, Adolescent Girls

INTRODUCTION

Children, adolescent girls, and women of reproductive age are a group at risk of anemia (Balarajan, Ramakrishnan, Özaltın, Shankar, & Subramanian, 2011). Disadvantages of iron is the reason most main which affects 50% of anemia in women worldwide (Kassebaum, 2016). Anemia is a condition that occurs when the quantity and levels in red blood cells (hemoglobin mediation) are under calculation of a set cut-off (<12g/dl), thereby impairing the capacity of blood to transport oxygen throughout the body (WHO, 2014). Anemia is more common in adolescents, especially in developing countries, and is a health problem in vulnerable communities. This study has been carried out in several developed and developing countries showing the results of the prevalence of anemia in children teenage girls prone to be higher than that of teenage boys (de Andrade Cairo, Silva, Bustani, & Marques, 2014).

According to WHO in the Prevention of Iron Deficiency Anemia in Adolescents shows that 7.5 million young girls in Indonesia suffer from anemia (WHO, 2011). The prevalence of teenage girls aged 10-18 years is as much as 57.1% and aged 19-45 years as much as 39.5% (Kemenkes, 2018). The health impact of anemia among women and children is a concern and a global burden of disease because it has lifelong negative consequences at the developmental stage (Black, 2012; Kassebaum et al., 2014).

This iron deficiency occurs because of the occurrence of inequalities between intake in the body and needs prolonged iron deficiency, inadequate iron intake or absorption, increased iron requirements during pregnancy or growth, and height iron reduction impact from menstruation and worms (intestine) (Balarajan et al., 2011; WHO, 2014). Adolescent girls experience menstruation, so they are at risk for iron deficiency anemia (Lopez, Cacoub, Macdougall, & Peyrin-Biroulet, 2016). Consuming a diet that is not sufficient for needs and concurrent with menstrual disorders or menstruation for the first time is also a factor in anemia. The amount of menstrual blood is also a cause of iron deficiency anemia (de Andrade Cairo et al., 2014).

One of the endeavors The solution to the problem of anemia is by consuming more foods that contain lots of iron. Iron is divided into two types, namely heme and non-heme. Heme iron is easier for the body to absorb than non-heme iron. Heme-type iron is mostly found in animal foods, while non-heme-type iron is more and more found in vegetables (Hurrell & Egli, 2010).

Based on the results of Riskesdas in 2018, from 80.9% of female adolescents who received iron

tablets at school, it was also found that 98.6% of female adolescents consumed less than 52 iron tablets. Meanwhile, female adolescents who consumed blood tablets more than 52 were only 1.4% (Kemenkes, 2018). Based on research conducted by Widiastuti, et al related to adherence to the consumption of blood supplement tablets, it was found that less than 50% of students living in urban areas consumed blood booster pills. Disorders often occur such as nausea, and dislike of the smell and taste. The last effort that is generally done is to maximize the consumption of Foods that contain lots of nutrients that can increase hemoglobin levels (Widiastuti & Rusmini, 2019).

RESEARCH METHODOLOGY

Reference for formulating research questions using "PICO" (Population, Intervention, Comparator, and Outcome)

Population	: Adolescent Girls
Intervention	: <i>Moringa Oleifera</i>
Comparator	: There are no comparisons or other interventions
Outcome	: Hemoglobin level

Search Strategy

The database used as a source of information search from various articles related to the topic uses five database sources, namely PubMed, PMC, EBSCO, Wiley, and ScienceDirect.

The inclusion and exclusion criteria in this research are as follows :

a. Inclusion Criteria

The inclusion criteria in this research were:

- 1) Articles published between 2010-2020
- 2) Articles published in English or Indonesian
- 3) Articles in full-text form
- 4) Articles with an open system (open access)
- 5) Using the subject of teenage girls
- 6) Article research results using Moringa leaf extract intervention without any other intervention.
- 7) Articles with outcome hemoglobin levels

b. Exclusion Criteria

The exclusion criteria from this research are:

- 1) Articles that are literature reviews or systematic reviews
- 2) Literature in the form of reviews or opinions

Search Results and Data Selection

The article selection process is described using a PRISMA flow diagram to transparently

describe the process that has been carried out. The article selection stage was carried out according to the criteria specified above by the researcher. Researchers use Zotero software in the process of selecting articles. In the excluding process, researchers use it manually. The stages of article screening are as follows; 1) Data is filtered through several databases namely PubMed, Wiley, EBSCO and ScienceDirect, and the google scholar service. Got a total of 1,158 search results, which are stored in Zotero,

Doing automatic duplicate article deletion in Zotero, there are 13 articles so the number of articles remaining is 1,145 articles, 3) Removing articles with

inappropriate study titles/abstracts, studies that do not use English/Indonesian, articles not in full-text form, articles not open access, in the form of article reviews, and literature in the form of theory or book reviews. The number of articles issued was 1,113 articles, and this was done by researchers manually, 4) Out of 32 articles, 23 articles with full text were excluded because they did not meet the criteria a) Subjects did not use female adolescents ($n = 13$), b) Interventions did not use extracts Moringa leaves or other interventions ($n=9$), and the outcome was not hemoglobin levels ($n=1$). So 9 articles are appropriate and can be used.

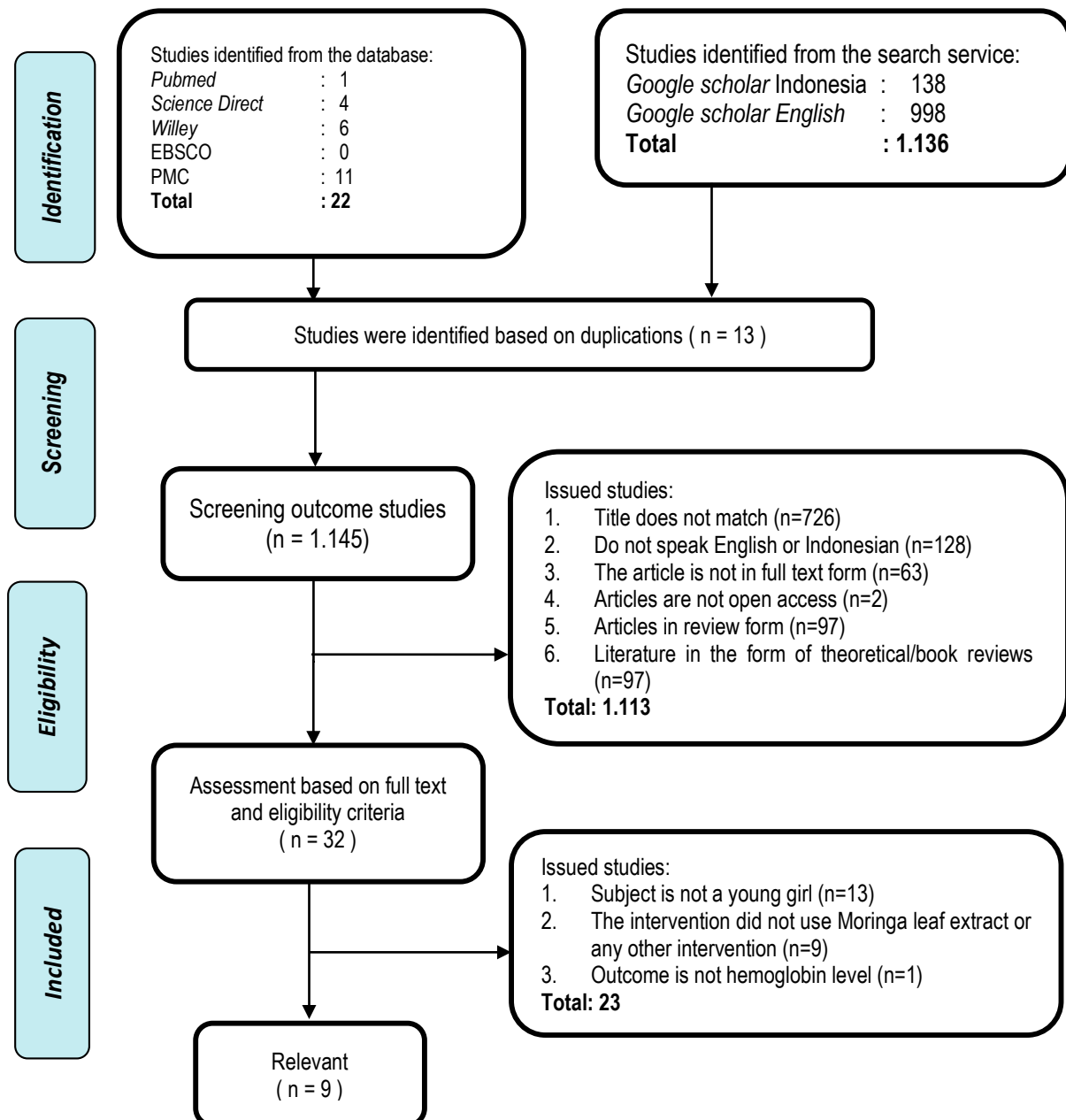


Figure 1. Article Search Process Flowchart I

RESEARCH RESULTS

Search Results Study

The search results for articles using PICO obtained a total of 1,158 search results for articles.

There were 13 articles detected as duplicates. After being screened for inappropriate study titles/abstracts, studies that did not use English/Indonesian, articles not in full-text form, articles not open access, in the form of article reviews, and literature in the form of theory or book reviews, 1,113 articles were issued. Of the 32 articles that were re-selected according to the criteria based on a) the subject did not use female adolescents (n=13), b) the intervention did not use moringa leaf extract or any other intervention (n=9), and the outcome was not hemoglobin levels (n=1). In total there were 23 published articles, so there were 9 articles suitable for systematic review analysis.

Study Quality and Risk of Bias

The entire article clearly states the characteristics of the samples taken. The variance among representatives belonging to the groups being compared is a threat to the validity of research studying causal relationships. If differences are found between representatives who enter the groups being compared, there is a risk of selection bias. Found 1 article that did not explain the method used in measuring hemoglobin levels.

Of the 8 articles using a quasi-experimental design, there is also a risk of bias because the study was conducted in only one group and the results were observed before and after the intervention was given.

Estimation bias in the study showed that the definite article results used in the systematic review were thought to result in selection bias because the majority of the sample sizes used non-probability techniques, namely 8 out of 9 articles that used Moringa leaf extract intervention, resulting in a lack of random selection procedures in the research sample.

DISCUSSION

Based on the literature review that has been carried out conclusions can be drawn that giving the essence of Moringa leaves can affect the hemoglobin level of female adolescents. All the articles analyzed stated that there was an increase, in general, in the percentage of hemoglobin after being given the moringa leaf essence intervention, although there are some that do not fully explain the dose used. Based on research conducted by Tri Hartati, et al, it was found that the results found significant variation before and after giving powder tablets containing moringa a total of 70 mg per day which use for 14 days (2 weeks)(Hartati & Sunarsih, 2021).

The research is in line with the research results of Ponomban, et al who revealed that with the

provision of capsules in which there is Moringa leaf powder with a dose of 2 x 2 capsules per day (each capsule contains 500 mg of Moringa leaf powder) for 30 days can increase the percentage of hemoglobin in pregnant women. Research by Tende, et al (Tende, Ezekiel, Dikko, & Goji, 2011) submit that one way that can be lived to control Malnutrition is by using Moringa leaves for additional diet, because Moringa leaves contain very complete protein (contains 9 essential amino acids), calcium, iron, potassium, magnesium, zinc and vitamins A, C, E and B vitamins great benefits for the immune system (Ponomban, Walalangi, & Harikedua, 2013).

Moringa Oleifera or commonly called Moringa leaves are found in many tropical and subtropical regions, especially in Indonesia. Moringa can grow in even the harshest, driest soil though almost nothing else will grow. Moringa oleifera plants are easy to find. Due to their availability and easy use, moringa leaves can be prepared in all traditional recipes in fresh, boiled, or dry forms (Bey, 2010; Gull, Javed, Aslam, Mushtaq, & Athar, 2016; Nambiar, 2015).

Moringa is sometimes called "Mother's Best friend" and "Miracle Tree" Since 1998, WHO has been promoting moringa to supply choice imported food to treat malnutrition. Moringa provides a rich and rare combination of nutrients, amino acids, antioxidants, anti-aging, and anti-inflammatory properties that are used for nutrition and healing. The antioxidant and anti-inflammatory activity of ethanol essence as originally a natural antioxidant ah as a deterrent increases the development of various diseases such as recovery from anemia, cancer, constipation, diabetes, hypertension, kidney stones, thyroid disorders, and other diseases (Alhakmani, Kumar, & Khan, 2013; Mahmood, Mugal, & Haq, 2010). Research by Madukwe, et al states that Moringa leaf extract is rich in essential nutrients and can be used in food supplementation to improve the nutritional status of individuals and communities, especially in children, adolescents, and pregnant women (Madukwe, Ugwuoke, & Ezeugwu, 2013).

The nutritional content in Moringa leaves is 7 times the vitamin C in citrus fruits, 4 times the vitamin A in carrots, 4 times the calcium in milk, 3 times the potassium in bananas, 3 times the iron in spinach, and 2 times the protein found in yogurt or the protein contained in an egg. Moringa leaves contain very high iron (Fe), even the ability of iron in Moringa leaves that have been made into flour is much higher, namely 28.2 mg per 100 grams of flour made from Moringa leaves. has a high nutritional content. (Tinna) Similarly, Bey showed that the Fe content of Moringa leaf powder was 25 times more than

spinach, 10 times more vitamin A than carrots, and 7 times more vitamin C than oranges (Bey, 2010).

Based on Bey's research, it was revealed that there is a high amount of iron content in the leaves of *Moringa Oleifera*, especially when the leaves are fresh (Bey, 2010). However, control over the production of fresh *Moringa* leaves is very difficult to use as a benchmark. Because of the way each individual is made not the same. Therefore, *Moringa Oleifera* leaves or moringa leaves which is possible to be standardized and easy to control in the manufacturing process are in the form of powder. If the *Moringa* leaves are dried and in puree, if it is processed in such a way then the nutrients in them can be multiplied, except for the contents in it such as vitamin C. Increased nutrient content in dried *Moringa* leaves. This is because the water content in *Moringa* leaves is still fresh and sucking, and the hot air that is released causes the hidden nutrient content to free the bonds in it (Ponomban et al., 2013).

Based on research conducted by Alessandro Leone, et al (Leone et al., 2015) obtain the results of observations of laboratory checks to determine the content of essential nutrients. *Moringa* leaves from South Sulawesi, namely protein content of 25.25%, iron 91.72 mg, and vitamin A 33,991.51 ug, vitamin C 1125.71 mg and vitamin E 3.34 mg per 100 grams of material used. *Moringa* leaves dry it has a vitamin C content of 773 mg per 100 grams of dry matter. *Moringa* leaf essence supplements are also considered more effective in preventing anemia and can help the body maintain normal Hb levels in the blood (preventing anemia).

The 4th article that was researched by Lusi Indriani et al found one respondent in the intervention group expressed several complaints they felt in themselves such as dizziness, a heavy head, and feeling weak. This incident could have occurred allegedly because the respondent consumed *Moringa* leaf powder capsules on an empty stomach (had not eaten). Temporarily lately There is still no research on the side effects that will occur when using *Moringa* leaves. The entire article recommends giving *Moringa* leaf extract to teenage girls. Intensifying education and promotion of the benefits of *Moringa* leaves to people in the community (Indriani, Zaddana, Nurdin, & Sitinjak, 2019).

The limitations of this research are that there are still too few interventions on *Moringa* leaf extract and are only applied in several countries, some of which are supplemented with other interventions or in the form of fortification of the *Moringa* leaves themselves. *Moringa* leaves themselves also only grow in tropical or sub-tropical regions, so not many

countries have conducted research using *Moringa* leaf interventions.

CONCLUSION

Based on the literature review that has been carried out, there is an effect of giving *Moringa* leaf essence (*Moringa Oleifera*) on blood hemoglobin levels in female adolescents.

SUGGESTIONS

Authors hoped that this research will be carried out in more depth using other methods such as the systematic review method with meta-analysis or research using the same primary data as the subject which is more thorough and limits the characteristics of the subject by focusing on the factors that affect blood hemoglobin levels and further research related to the side effects of using *Moringa* leaves.

It is hoped that parents who have teenage daughters will provide food made from moringa leaves to meet the nutritional needs of adolescent girls so that anemia does not occur or treat anemia in female adolescents. It is hoped that health workers will intensify the benefits of *Moringa* leaves for the community.

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HEALTH BELIEF MODEL (HBM) PREVENTIVE BEHAVIOR OF PREGNANT WOMEN DURING THE COVID-19 PANDEMIC

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ABSTRAK : HEALTH BELIEF MODEL (HBM) PERILAKU PREVENTIF IBU HAMIL PADA MASA PANDEMI COVID 19

Latar Belakang: Coronavirus merupakan virus RNA strain tunggal positif, berkapsul dan tidak bersegmen dengan nama severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) dengan nama penyakitnya adalah Coronavirus Disease 2019. Data sebaran kasus covid di provinsi NTT adalah 15.217 jiwa terkonfirmasi positif dengan sebaran kabupaten/kota teratas tanggal 6 Mei 2021, adalah Kota Kupang, Kabupaten Sumba Timur dan Kabupaten Ende. Pada kelompok ibu hamil, terdapat 4.9% ibu hamil terkonfirmasi positif covid 19. Data ini menunjukkan bahwa ibu hamil, bersalin, nifas dan bayi baru lahir juga merupakan sasaran yang rentan terhadap infeksi Covid 19 dan kondisi ini dikhawatirkan akan meningkatkan morbiditas dan mortalitas ibu dan bayi baru lahir. Ibu hamil, lebih rentan terhadap morbiditas Covid 19 dikarenakan perubahan fisiologis dan imunologis selama masa kehamilan. Health Belief Model (HBM) merupakan sebuah model untuk memahami kesulitan individu dalam mengikuti program pencegahan dalam konteks kesehatan.

Tujuan: untuk mengetahui health belief model (HBM) perilaku preventif ibu hamil pada masa pandemi covid 19 di kota Ende.

Metode penelitian: Penelitian ini menggunakan studi deskriptif dengan teknik studi korelasional. Penelitian akan dilaksanakan pada 5 puskesmas di kota Ende pada bulan Januari – Desember 2022. Proyeksi populasi ibu hamil pada 5 puskesmas adalah 500 ibu hamil. Teknik pengambilan sampel adalah double sampling yaitu metode quota sampling dan purposive sampling. Jumlah sampel dengan menggunakan rumus Slovin yang berjumlah 221 ibu hamil. Teknik pengumpulan data kuantitatif dengan memberikan kuisioner tentang health belief model (HBM) perilaku preventif ibu hamil pada masa pandemi covid 19 di kota Ende, kuisioner berjumlah 40 pertanyaan tertutup yang telah diuji validitas dan reliabilitas. Analisis data kuantitatif dengan Pearson Product Moment dan Uji Regresi linear.

Hasil penelitian: Koefisien korelasi sebesar 0,295 dengan signifikansi 0,000. Ha diterima karena signifikansi >0,05. Jadi terdapat hubungan positif yang signifikan antara health belief model (HBM) dengan perilaku preventif pada ibu hamil di masa pandemi covid 19 di Kota Ende. Berdasarkan nilai signifikansi sig (2-tailed) sebesar 0,000 menunjukkan bahwa terdapat korelasi yang signifikan antara variabel HBM dengan perilaku preventif pada ibu hamil di masa pandemi covid 19 di Kota Ende. Hasil uji regresi linear didapatkan hasil bahwa nilai signifikan value F test < 0,05 yaitu nilai Sig 0,000, yang berarti bahwa variabel independent mempunyai hubungan linier dengan variabel dependen. Secara bersama sama persepsi perceived susceptibility (kerentanan yang dirasakan), perceived severity (Bahaya/kesakitan yang dirasakan), perceived benefit (Keyakinan akan manfaat yang dirasakan) dan perceived barrier (Hambatan yang dirasakan) berpengaruh pada perilaku preventif pada ibu hamil pada masacovid 19 di Kota Ende Tahun 2022.

Kesimpulan: Terdapat hubungan antara HBM dengan perilaku preventif pada ibu hamil pada masa covid 19 di Kota Ende

Saran: Ibu hamil agar meningkatkan perilaku preventif untuk mencegah covid 19 selama masa kehamilan

Kata Kunci : Health Belief Model (HBM); Preventif; Ibu hamil; Covid 19

ABSTRACT

Background:.. Coronavirus is a positive single strain RNA virus, encapsulated and not segmented with the name severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) with the name The disease is Coronavirus Disease 2019. Data on the distribution of covid cases in the province of NTT is 15,217 people who are positively confirmed with the distribution of the top regencies/cities on May 6, 2021, namely Kupang City, East Sumba Regency and Ende Regency. In the group of pregnant women, there were 4.9% of pregnant women were confirmed positive

for Covid 19. This data shows that pregnant women, childbirth, postpartum and newborns are also vulnerable targets for Covid 19 infection and this condition is feared to increase maternal and infant morbidity and mortality. Newborn. Pregnant women are more susceptible to Covid-19 morbidity due to physiological and immunological changes during pregnancy. The Health Belief Model (HBM) is a model to understand individual difficulties in participating in prevention programs in the context of health.

Purpose: to find out the health belief model (HBM) for the preventive behaviour of pregnant women during the COVID-19 pandemic in the city of Ende.

Research method: This study uses a descriptive study with a correlational study technique. The research will be carried out at 5 puskesmas in the city of Ende from January – December 2022. The projected population of pregnant women in 5 puskesmas is 500 pregnant women. The sampling technique was double sampling, namely quota sampling and purposive sampling methods. The number of samples using the Slovin formula amounted to 221 pregnant women. Quantitative data collection techniques by providing a questionnaire about the health belief model (HBM) preventive behaviour of pregnant women during the covid 19 pandemic in the city of Ende, a questionnaire consisting of 40 closed questions that have been tested for validity and reliability. Quantitative data analysis with Pearson Product Moment and Linear Regression Test.

Results: The correlation coefficient is 0.295 with a significance of 0.000. H_0 is accepted because the significance is > 0.05 . So there is a significant positive relationship between the health belief model (HBM) and preventive behaviour in pregnant women during the COVID-19 pandemic in Ende City. Based on the significance value of sig (2-tailed) of 0.000, it shows that there is a significant correlation between the HBM variable and preventive behaviour in pregnant women during the covid 19 pandemic in Ende City. The results of the linear regression test showed that the significant value of the F test value < 0.05 , namely the Sig value of 0.000, which means that the independent variable has a linear relationship with the dependent variable. Together the perceptions of perceived susceptibility (perceived vulnerability), perceived severity (perceived danger/pain), perceived benefit (belief in perceived benefits) and perceived barriers (perceived barriers) affect preventive behavior in pregnant women during the COVID-19 period. in Ende City in 2022.

Conclusion: There is a relationship between HBM and preventive behavior in pregnant women during the covid 19 period in Ende City.

Suggestion: Pregnant women should increase preventive behaviour to prevent covid 19 during pregnancy

Keywords: Health Belief Model (HBM); Preventive; Pregnant mother; Covid 19

INTRODUCTION

Coronavirus is a positive single strain RNA virus, encapsulated and not segmented with the name of the disease is Coronavirus Disease 2019 (Covid 19) (WHO, 2020). Covid 19 is a respiratory infection that was first identified in China (Rasmussen et al., 2020). Based on WHO data, on May 5, 2021, 153 million people were confirmed positive (WHO, 2021). Data on the distribution of covid cases in NTT province is 15,217 people who have been confirmed positive with the distribution of the top regencies/cities on May 6, 2021, namely Kupang City, East Sumba Regency and Ende Regency (Gugus Tugas Percepatan Penanganan Covid 19 NTT, 2021). 4.9% of pregnant women were confirmed positive for Covid 19 from 1,483 confirmed cases. This data shows that pregnant women, childbirth, postpartum and newborns are also vulnerable targets for Covid 19 infection (Kementerian Kesehatan RI, 2020).

Pregnant women are vulnerable to Covid-19 morbidity due to physiological and immunological changes during pregnancy. The results of the

haematological examination of pregnant women with Covid 19 showed a decrease in monocytes and lymphocytes, total leukocytes, an increase in platelets and haemoglobin (Hb), an increase in lactate dehydrogenase (LDH), and a decrease in creatinine, fibrinogen and D-Dimer (Martinelli et al., 2020). There is a shift in the body's immunity from Th1 to Th2 in pregnant women, while Th2 is a producer of IL-4, IL-10, IL-13, and TGF β cytokines that act as anti-inflammatory (Nurdianto et al., 2020). The shift in the T helper population makes pregnant women more susceptible to infection with SARS-CoV-2. SARS-CoV-2 infection in pregnancy stimulates an increase in the expression of proinflammatory cytokines, namely IL-6, IL-12, IL-1 β , and IFN γ which can damage lung organs. The more dominant Th2 shift makes anti-inflammatory cytokines can offset the expression of pro-inflammatory cytokines (Nurdianto et al., 2020). IL-6 causes severity and death in Covid-19 patients. This causes the severity of Covid 19 in pregnant women to be lower (Dashraath et al., 2020).

One of the problems faced by the MCH program during the COVID-19 period was the knowledge of mothers and families regarding COVID-19 and health services for mothers and newborns in the pandemic era (Pritasari, 2020). The government's efforts to overcome this problem are setting a schedule for ANC examinations, using the MCH handbook as an IEC medium, utilizing communication media for consultations, pregnant women, families and cadres play an active role in monitoring pregnancy danger signs, making appointments if some complaints/conditions require examination. Filling out the P4K sticker is guided through communication tools and delaying the class for pregnant women or being replaced by an online class for mothers (Kementerian Kesehatan Republik Indonesia, 2020). Another effort offered by researchers is the Health Belief Model (HBM). HBM is a model created in 1950 which aims to understand individual difficulties in participating in prevention programs in a health context (Rosenstock, 1974). HBM began to develop and be adapted for various studies related to individual preventive actions related to health behaviour. HBM is a concept that is commonly used to research and understand healthy behaviour by the community (Wahyusantoso & Chusairi, 2021). HBM predicts why people will take action to prevent, screen for, or control disease conditions; including vulnerability, seriousness, benefits and barriers to a behavior (Nurdianto et al., 2020).

The purpose of the study to determine the health belief model (HBM) of preventive behaviour for pregnant women during the COVID-19 pandemic in the city of Ende

RESEARCH METHODOLOGY

This study uses a descriptive study with a correlational study technique. The correlation technique aims to determine whether there is a relationship between the independent and dependent variables, how close and how meaningful the relationship is. The study was conducted in January - December 2022 at 5 public health centres in Ende City. The population projection at 5 puskesmas in the city of Ende is 500 pregnant women. The sampling technique was *double sampling* methods *quota sampling* and *purposive sampling*. In *quota sampling*, the sample size is determined as an estimate to obtain the data needed to reflect the population. While *purposive sampling* is sampling based on the consideration of the

researcher (Setiawan & Saryono, 2011). The research location consists of 5 public health centres in the city of Ende. The size of the determination of the number of samples for each public health centres is divided according to the quota public health centres. The sample size in this study is calculated using the Slovin formula as follows:

$$n = \frac{N}{1 + (N(d)2)}$$

$$n = \frac{500}{1 + (500(0,05)2)} = 221$$

The description of the number of samples is as follows:

Tabel 1
Determination of the Number of Samples Based on *quota sampling*

Name of Public Health Center	Sample
Onekore	45
Rukun Lima	44
Kotaratu	42
Rewarangga	44
Kota Ende	44

Data collection techniques by giving a questionnaire about *the health belief model* (HBM) of preventive behaviour of pregnant women during the covid 19 pandemic in the city of Ende. The questionnaire consists of 40 closed questions. Data collection techniques were carried out by enumerators (midwives) who worked at the puskesmas. The method of data collection is following the respondent's ANC visit schedule (pregnant women) and by conducting home visits to respondents. The validity of the questionnaire has been tested with a calculated *r* value between 0.245 – 1 > *r* table 0.1809. The results of the reliability test with = 0.860. Cronbach's Alpha value > 0.60 then the questionnaire is declared reliable or consistent. Quantitative data analysis with *Pearson Product Moment* and *Linear Regression Test*. *Pearson's product-moment* is used to see the correlation between the independent and dependent variables which is then followed by a regression test. The independent variable is the *health belief model* which consists of *perceived susceptibility*, *perceived severity*, *perceived benefit* and *perceived barrier*. The dependent variable consists of the Preventive Behavior of Pregnant Women.

RESEARCH RESULT

Descriptive Analysis

Characteristics of Respondents

Table 2

Data of Respondents' Characteristics of Pregnant Women During the Covid-19 Period in Ende City in 2022

	Karakteristik	F	%
Age	< 20 year	8	3.6
	20 - 35 year	190	86.0
	> 35 year	23	10.4
Gravida	Primigravida	96	43.4
	Multigravida	99	44.8
	Grandemulti gravida	26	11.8
Education	undecated	1	.005
	Elementary school	18	8.1
	Junior high school	19	8.6
	Senior high school	96	43.4
	Associate degree	87	39.4
Occupation	Household/Not working	155	70.1
	civil servant	15	6.8
	Private employee	51	23.1

Based on table 1 shows that most of the respondents aged 20-35 years are 190 pregnant women (86.0%). Most of the pregnant women with gravida status are primigravida and multigravida, namely 43.4% and 44.8%, respectively. Most of the respondents' education was high school, namely 96 respondents (43.4%). 155 respondents do not work (70.1%).

Analisis Deskriptif *Health Belief Model* Perilaku Preventif Pada Ibu Hamil

Based on table 2 shows the highest average preventive behaviour in pregnant women is Perceived susceptibility and the lowest average is perceived barrier.

Table 2.
***Health Belief Model* Perilaku Preventif Pada Ibu Hamil Masa Covid 19 di Kota Ende Tahun 2022**

Characteristics	Mean	SD	N
<i>Perceived susceptibility</i>	4.2344	.59726	221
<i>Perceived severity</i>	3.5100	.98188	221
<i>Perceived Benefit</i>	4.0913	.69035	221
<i>Perceived Barrier</i>	3.1650	1.15374	221

Bivariate Analysis

Bivariate Analysis of the Correlation of HBM with Preventive Behaviour in Pregnant Women

Tabel 3
HBM Correlation with Preventive Behaviour For Pregnant Women in Ende City in 2022

		HBM	Perilaku Preventif
HBM	Pearson Correlation	1	.295**
	Sig. (2-tailed)		.000
	N	221	221
Behaviour_Preventif	Pearson Correlation	.295**	1
	Sig. (2-tailed)	.000	
	N	221	221

** . Correlation is significant at the 0.01 level (2-tailed).

Table *Correlation*, the correlation coefficient value is 0.295 with a significance of 0.000. Ha is

accepted because the significance is > 0.05. So there is a significant positive relationship between the

health belief model (HBM) and preventive behaviour in pregnant women during the COVID-19 pandemic in Ende City. Based on the significant value of sig (2-tailed) of 0.000, it shows that there is a significant

correlation between the HBM variable and preventive behaviour in pregnant women during the covid 19 pandemic in Ende City.

Tabel 4
Results of the Linear *Health Belief Regression Model* with Preventive Behavior in Pregnant Women During the Covid-19 Period in Ende City in 2022

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.196	1	2.196	20.913	.000 ^b
	Residual	22.998	219	.105		
	Total	25.195	220			

a. Dependent Variable: Perilaku Preventif Ibu Hamil

b. Predictors: (Constant), HBM

From Table 4 the results of the linear regression test show that the significant value of the F test value <0.05 is the Sig value of 0.000, which means that the independent variable has a linear relationship with the dependent variable. Together the perceptions of *perceived susceptibility*, *perceived severity*, *perceived benefit* and *perceived barriers* affect preventive behaviour in pregnant women during the covid-19 period. in Ende City in 2022.

DISCUSSION

Based on table 1 shows that most of the respondents are aged 20-35 years, namely 190 respondents (86.0%). A person's knowledge is influenced by a person's age, the older he gets, the more his level of knowledge increases (Nirwan & Sari, 2022). Reproductive age (20-35 years old) is the age that plays the most role and has solid activity and good cognitive abilities. This age influences the level of knowledge (Pangesti, 2012). The results of the study indicate that the majority of pregnant women respondents who apply Covid 19 prevention behaviour through the application of health protocols are aged 20-35 years (Indrasuari, 2021). This is in line with research conducted by previous studies, namely there is a relationship between age and covid 19 prevention behaviour with $p = 0.001 < 0.005$ (Nirwan & Sari, 2022). The results of different studies indicate that there is no significant relationship between the variables characteristic of the age of pregnant women and the behaviour of preventing covid 19 (Atmojo et al., 2022).

Gravida is the status of the number of pregnancies experienced by a woman. The level of gravida can affect the health status of the mother and child (Notoatmodjo, 2012). Most of the respondents in this study were 96 primigravida (43.4%) and 99

multigravida (44.8%). The results showed that there was a significant relationship between gravida status and covid-19 prevention behaviour ($p < 0.05$). The majority of primigravida and multigravida mothers have high behaviour. Women who have given birth for the first time tend to have better health than those who give birth more often (Atmojo et al., 2022). There is a significant relationship between the experience of pregnancy and childbirth with the incidence of complications during pregnancy and birth (Notoatmodjo, 2012).

Most of the respondents in this study were high school educated, namely 96 people (43.4%) and college graduates (D3/S1), namely 87 people (39.4%). The level of education can affect a person's level of knowledge. For someone with good education and knowledge, then the behaviour shown is also good. This is in line with research conducted in China as the origin of the emergence of the coronavirus. The results of the study found that the Chinese people had good and positive knowledge and behaviour to prevent contracting the coronavirus, this was also connected with the experience of the community in dealing with the *severe acute respiratory syndrome* (SARS) outbreak in the 2000s (Zhong et al., 2020). In line with the results of research conducted on people in North Sulawesi with data analysis using the Pearson chi-square test, the value of $p = 0.000 < 0.05$, which means that there is a relationship between the level of education and the behaviour of preventing covid 19. The higher a person's education level, the more good behaviour to prevent covid-19 (Gannika & Sembiring, 2020).

The *health belief model* (HBM), was first introduced by Rosenstock and developed in the early 1950s. HBM is used in health education and health

promotion (Glanz et al., 2002). The HBM theory is derived from psychological and behavioural theory on the basis that the two components of health-related behaviour are: 1) the desire to avoid illness, or otherwise recover if already ill, and, 2) the belief that certain health actions will prevent, or healing, sick. Ultimately, of course, individual actions often depend on people's perceptions of the benefits and barriers associated with health behaviours. The HBM theory has six elements. The first four elements are the basic elements of HBM theory. Meanwhile, the last two elements are additional elements based on the results of research and theory modification by experts.

Perceived susceptibility with preventive behaviour in pregnant women during the Covid 19 pandemic

Based on table 2 shows that the highest average preventive behaviour of pregnant women during the covid-19 period in the city of Ende is *perceived susceptibility* (perceived vulnerability) which is 4.2344 with a value range of 1-5 and SD 0.59726. *Perceived susceptibility* refers to a person's perception of the risk of acquiring a disease. The greater the perceived risk, the more likely it is to engage in risk-reducing behaviour. This component measures the individual's perception of risk about how likely it is to suffer from the disease or the risk that may occur as a result of the disease. This variable measures the individual's subjective perception of risk about how likely it is to get a disease or the risk that may occur as a result of the disease (Kılınçel et al., 2021; Winarti & Saadah, 2021). For example, in medical treatment, someone is willing to accept a diagnostic examination, because subjectively the individual predicts the danger of disease that must be faced. For example, for respondents who have been exposed to a type of COVID-19 virus in the form of the SARS and Mers viruses, the results of the *perceived susceptibility* show that the client is aware that he or she is at risk of getting covid-19.

The results of other studies show that almost half of them have *perceived susceptibility* in the low category in the high-risk category, almost half of them carry out good covid 19 prevention behaviour, and only a small part does not carry out covid 19 prevention behaviour (Winarti & Saadah, 2021). *Perceived susceptibility* in the no risk, less risk category, and at high risk, only a small proportion of them do not carry out covid-19 prevention behaviour. On the other hand, respondents continue to carry out preventive behaviour properly. This is of course influenced by their feelings of vulnerability related to

covid-19. Not everyone feels vulnerable to covid-19 which is a virus that infects many people in the world. The assessment of *perceived susceptibility* in terms of several factors from the respondents of this study. The assumption is that all ages or ages can be affected by covid-19, all family members can be infected with covid-19 at any time, not always prevention and hygiene behaviour protected from the covid- 19 outbreak and the assumption that not taking preventive measures at all times makes it possible to get covid 19. *Perceived Susceptibility* or The perception of vulnerability refers more to subjective opinions or assessments of the risk of health problems, in this case, the risk of developing covid-19. Based on research data, individuals who are not at risk for covid-19 are less likely to take preventive measures.

The results of different studies conducted indicate that the perception of vulnerability has no significant effect on the behaviour of pregnant women in preventing covid-19 (Fransiska et al., 2022). This is different from the results of previous studies which showed the perception of vulnerability to the health behaviour of pregnant women (Aghababaei et al., 2020). The perception of vulnerability has a significant influence on efforts to prevent covid-19 in pregnant women (Ferrer & Klein, 2015). Other studies have stated that the perception of vulnerability is an important determinant of health behaviour, but it can still change depending on the characteristics of each type of vulnerability perception and the level of accuracy of the perception. The perception of vulnerability is often said to have a positive relationship with prevention behaviour. However, in some cases, negative interactions with preventive behaviour are often found. The negative interaction in question, for example, when the perception of risk is high, but the chances of success are very small, the possibility of implementing preventive behaviour is reduced (Aghababaei et al., 2020).

Perceived severity with preventive behaviour in pregnant women during the Covid-19 pandemic

Average *perceived severity* in table 1 is 3.5100 with a value range of 1 – 5 and SD is 0.98188. This variable relates to an understanding of the perceived seriousness of the disease. This relates to the seriousness of a disease or when a person tolerates the disease. The component in this variable is the evaluation a person makes of medical care and its clinical and social consequences. Individual actions to seek treatment and prevention of disease will be driven by the seriousness of the disease to the individual or society (Winarti & Saadah,

2021). Perception of seriousness is mentioned as one of the variables that significantly influence the behaviour of pregnant women in dealing with covid-19. People with a high level of perception of seriousness are more likely to take preventive measures against infectious diseases. Perception of seriousness is influenced by demographic characteristics, age, level of knowledge, and other factors (Khazaeian et al., 2020). The perception of seriousness and the perception of vulnerability have an important influence on the behaviour of preventing covid-19 in pregnant women, but they also have the potential to increase the risk of depression and anxiety. That is, the higher a person's perceived vulnerability and perceived seriousness, the more likely that person is to take preventive action. However, these people are also more at risk for depression and anxiety.

Perceived benefits with preventive behaviour in pregnant women during the Covid-19 pandemic

Average *perceived benefit* (belief in perceived benefits) in table 1 is 4,0913 with a value range of 1-5 and SD 0.69035. *Perceived benefit* is a belief or understanding of the perceived benefits of the actions taken. This variable contains a person's belief or opinion about the efficacy of reducing the risk and seriousness of a health problem. This variable emphasizes the benefits that will be obtained if the client takes an action (Brontosaputro, 2002).

Perceived barrier to preventive behaviour in pregnant women during the Covid 19 pandemic

The lowest average score is the *perceived barrier* (perceived barriers) in table 2, which is 3.1650 with a value range of 1-5 and SD 1.15374. This component describes the negative aspects of certain health. This can be seen when individuals carry out the effectiveness of a health action with the number of costs incurred or the side effects of treatment. This variable relates to the obstacles experienced by the client to take an action (Rosenstock et al., 1994; Winarti & Saadah, 2021). Most of the respondents do not work or are housewives, namely 155 people (70.1%). The results showed significant results between attitudes and housewives' compliance in implementing covid 19 prevention behaviour (OR = 3.392 and confidence interval (CI) = 1.599 - 7.199). This shows a risky attitude towards compliance in the prevention of covid 19 (Ekadipta et al., 2021).

In general, it is believed that a person will act to prevent, mitigate and regulate lifestyle related to health conditions, referring to the *health beliefs* they have (Rosenstock, 1974; Rosenstock et al., 1994). HBM is used to explain the concept of understanding

individual behaviour. The behaviour in question is health behaviour, both in the realm of preventive and curative (Janz & Becker, 1984). HBM influences compliance with the recommended health behaviour policy. measured during the 2009 swine flu (H1N1) pandemic in Taiwan's *health*. 70% of the study population reported that they improved hand hygiene practices during the H1N1 pandemic (Miao & Huang, 2012).

The results of multivariate logistic regression analysis showed that increased hand hygiene practices were associated with an individual's HBM of handwashing health practices during the pandemic. The dimensions of HBM that become significant predictors are *perceived susceptibility*, *perceived severity*, *perceived benefit/effectiveness*, and *perceived barriers*. These four dimensions are key dimensions in predicting individual healthy behaviour in a pandemic situation, where the healthy behaviour in question is behaviour to prevent contracting the virus during a pandemic (Miao & Huang, 2012). The Health Belief Model has a relationship and influence and can be a predictor of health behaviour suggested to individuals (Aradista, 2020).

CONCLUSION

There is a relationship between HBM and preventive behavior in pregnant women during the covid 19 period in Ende City.

SUGGESTION

Pregnant women should increase preventive behaviour to prevent covid 19 during pregnancy

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HYPNOBIRTHING AND REBOZO AFFECT THE DURATION OF LABOR IN II AND APGAR SCORES

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ABSTRAK : HYPNOBIRTHING DAN REBOZO TERHADAP LAMA PERSALINAN KALA II DAN SKOR APGAR

Latar Belakang: Angka kematian ibu dan angka kematian bayi di Indonesia masih tinggi. Partus lama menjadi penyebab 31% kematian ibu. Adapun kematian bayi 27,4% disebabkan karena asfiksia. Asfiksia dapat dideteksi dengan melalui pengukuran skor Apgar. Pemberian hypnobirthing dan teknik rebozo dipercaya dapat mempercepat lama persalinan kala II dan meningkatkan skor Apgar.

Tujuan: Mengetahui pengaruh pemberian hypnobirthing dan rebozo terhadap lama persalinan kala II dan skor Apgar.

Metode: Penelitian merupakan *quasy experiment*, dengan desain *posttest only with control group design*, di mana kelompok eksperimen diberikan hypnobirthing dan rebozo dan kelompok kontrol hanya diberikan hypnobirthing. Populasi adalah ibu melahirkan di BPM Bidan D di Garut pada periode November – Desember 2021. Sampel masing-masing kelompok sejumlah 20 ibu melahirkan, diambil dengan *purposive sampling*. Pengukuran lama persalinan kala II digunakan stopwatch dan pada skor Apgar digunakan tes Apgar. Analisis data digunakan uji t sampel independen apabila data penelitian distribusi data normal, dan uji Mann Whitney apabila data penelitian tidak distribusi data normal.

Hasil: Hasil pengujian Mann-Whitney menunjukkan bahwa pemberian hypnobirthing dan rebozo berpengaruh terhadap lama persalinan kala II, ditunjukkan dari nilai Z sebesar -4,420 dan p sebesar 0,000 ($p < 0,05$). pemberian hypnobirthing dan rebozo tidak berpengaruh terhadap skor Apgar, ditunjukkan dari nilai Z sebesar -0,284 dan p sebesar 0,776 ($p > 0,05$).

Kesimpulan: Pemberian hypnobirthing dan rebozo berpengaruh terhadap penurunan lama persalinan kala II, dan tidak berpengaruh terhadap skor Apgar.

Saran: hendaknya bidan membuat suatu video pembelajaran teknik hypnobirthing dan rebozo, agar ibu hamil dapat menerapkan teknik hypnobirthing selama masa kehamilan, dan sebagai pembelajaran bagi bidan agar dapat membantu ibu bersalin dalam melakukan teknik rebozo.

Kata kunci: Skor Apgar, Hypnobirthing, Lama Persalinan Kala II

ABSTRACT

Background: Maternal and infant mortality rates in Indonesia are still high. Long parturition is the cause of 31% of maternal deaths. The 27.4% infant mortality was caused by asphyxia. Asphyxia can be detected by measuring the Apgar score. Giving hypnobirthing and rebozo technique is believed to speed up the duration of the second stage of labor and increase the Apgar score.

Purpose: To determine the effect of hypnobirthing and rebozo on the duration of the second stage of labor and the Apgar score.

Methods: This research is a quasi experiment, with a posttest only design with control group design, where the experimental group was given hypnobirthing and rebozo and the control group was only given hypnobirthing. The population is mothers giving birth at BPM Midwife Dina Garut in the period November – December 2021. The sample of each group is 20 mothers who give birth, taken by purposive sampling. The measurement of the duration of the second stage of labor was used a stopwatch and the Apgar score was used for the Apgar test. Data analysis used the independent sample t test if the research data was normally distributed, and the Mann Whitney test if the research data was not normally distributed.

Result: The results of the Mann-Whitney test showed that hypnobirthing and rebozo had an effect on the duration of the second stage of labor, indicated by the Z value of -4.420 and p of 0.000 ($p < 0.05$). giving hypnobirthing and rebozo had no effect on Apgar score, indicated by Z value of -0.284 and p of 0.776 ($p > 0.05$).

Conclusion: The implementation of hypnobirthing and rebozo had an effect on decreasing the length of the second stage of labor, and had no effect on the Apgar score.

Suggestion: Midwives should make a video learning the hypnobirthing and rebozo techniques, so that pregnant women can apply the hypnobirthing technique during pregnancy, and as a lesson for midwives so they can help mothers in childbirth in doing the rebozo technique.

Keywords: Apgar Score, Hypnobirthing, Second Stage Labor Duration

INTRODUCTION

Health development is an investment that aims to improve the quality of human resources. Maternal Mortality Rate (MMR) and Infant Mortality Rate (AKB) are indicators of health degrees as well as indicators of successful health development (Alvaro et al., 2021). Maternal mortality in this indicator represents all deaths during the period of pregnancy, childbirth, and puerperium caused by pregnancy, childbirth, and puerperium or their management but not from other causes such as accidents or incidental. The Maternal Mortality Rate (MMR) is all deaths within that scope in every 100,000 live births (Ministry of Health, 2021).

Indonesia's maternal mortality rate (MMR) is still high, in 2019 it was recorded at 305 per 100,000 live births. In fact, Indonesia's MMR target in 2015 is 102 per 100,000 live births (Susiana, 2019). One of the causes of maternal death is the old partus. Partus lama is the cause of 31% of maternal deaths (Qonitun & Fadilah, 2019). One of the causes of maternal death is long labor. Long labor is the cause of 31% of maternal deaths (Qonitun & Fadilah, 2019). The labor process includes 4 stage, stage 1 is the opening time of the cervix 1 – 10 cm. Stage 2 is the time the baby born. Stage 2 delivery begins after complete opening (10 cm) until the baby is born. In childbirth during II, in addition to courage and stamina, confidence in the skills of midwives that help the birth process is also needed (Syswianti et al., 2020).

Infant Mortality Rate (IMR) is the number of infant deaths in the first 28 days of life per 1000 live births (Simanungkalit & Purnawati, 2020). Data reported to the Directorate of Family Health, in 2020, found 20,266 neonatal deaths that occurred at the age of 0-28 days. Asphyxia is the cause of 27.4% of infant deaths (Ministry of Health, 2021). Asphyxia can be detected by measuring Apgar scores. Apgar score is the most commonly used system for neonatal assessment. It is fast and provides clear guidance on the status of the fetus (Vaughan et al., 2010). Scores are reported at 1 minute and 5 minutes after birth for all babies, and at intervals of 5 minutes thereafter to 20 minutes for babies with scores less than 7 (Watterberg et al., 2015). Apgar assessment is very important because it is to minimize asphyxia in infants which is a continuation of the low Apgar

score. At the time of delivery, the baby's heart rate must also be monitored with a dopler or linek to find out the well-being of the fetus in the womb (Putri, 2019).

Apgar's score of 0 at 10 minutes is a strong predictor of mortality and morbidity in premature babies and full-term infants. We advise that, in babies with an Apgar score of 0 after 10 minutes of resuscitation, if the heart rate remains undetected, it may make sense to stop the relief ventilation; However, the decision to continue or continue resuscitation efforts must be individual. The variables under consideration may include whether resuscitation is considered optimal; availability of advanced neonatal treatments, such as therapeutic hypothermia; certain circumstances before delivery (for example, the known time of the result); and wishes expressed by the family (Weiner et al., 2016).

One of the efforts that can be made to overcome the occurrence of long childbirth during II and the low score of Apgar is to provide hypnobirthing to the parturient. Hypnobirthing is a natural effort to build positive intentions into the subconscious soul/mind during pregnancy and preparation for childbirth (Legiati & Widiawati, 2017). *Hypnobirthing is believed to be beneficial because it makes mothers give birth more relaxed, calm, so that they can give birth comfortably and reduce pain during childbirth* (Sariati et al., 2016).

Anxiety and fear of mothers during childbirth can have an impact on the onset of severe pain and can also result in decreased uterine contractions, so that childbirth takes longer (Setiani et al., 2020). A study on hypnobirthing shows that hypnobirthing has an effect on increasing the frequency of uterine contractions, the duration of contractions, the opening of the cervix, and the decrease in the head of the fetus, so that it will speed up the delivery process (Muhidayati et al., 2018). The effect of hypnobirthing on the duration of delivery during II is proven by the research of Syswianti et al. (2020) and (Rini, 2010).

In addition, hypnobirthing also affects the value of Apgar (Rahmawati, 2018). Hypnobirthing is believed to be able to help the supply of oxygen to the baby during the delivery process so that the baby born has a better Apgar score (Marliana et al., 2016). Mothers giving birth with the application of

hypnobirthing reported less demand for medicines, less pain, and Apgar values in babies after birth showed a higher scale (Putrianti & Karuniawati, 2017). Research by Ngaziz et al. (2012); Khoiriyah et al. (2020) show that the application of hypnobirthing has an effect on increasing the value of Apgar. On the contrary, the research of Putrianti & Karuniawati (2017) showed that hypnobirthing had no effect on apgar values. Fitrianiingsih's research (2014) shows that the application of hypnobirthing has an effect on increasing the Apgar value in the first minute measurement and not significantly in the fifth minute measurement.

In addition to the application of hypnobirthing, the application of the rebozo technique can also speed up the second time of labor and increase the Apgar score. Rebozo is a versatile woven fabric commonly worn by women in Mexico and Guatemala. Often brightly colored and sometimes decorated with tassels, not only giving warmth as a shawl or blanket, but can be used for holding babies, older children, firewood or shopping, and has many other uses, the most interesting of which are used by traditional midwives. Rebozos are more than long enough to surround the body and about 70 cm wide (Davis, 2014). The rebozo technique is a practical, non-invasive technique that is carried out in a standing, lying or resting position on his hands and knees. This involves gently controlled movements of the mother's hips from side to side using a special woven scarf, and is performed by a midwife or delivery companion (Nurpratiwi et al., 2020).

Rebozo has been popularly used in developed countries by health workers in carrying out childbirth assistance as a non-pharmacological method. The rebozo technique is a noninvasive technique, practically performed when the maternity mother is in a standing, lying or knee position and both palms touch the floor. This involves gently controlled movements of the mother's hips from side to side using a special woven scarf, and is performed by a midwife or maternity companion (Yuriati & Khoiriyah, 2021).

Rebozo is a technique to give space to the baby in a way that is fun for the mother. Rebozo can be used during childbirth to help the muscles and muscle fibers in the uterine ligament relax so that it can reduce pain when there are contractions (Yuriati & Khoiriyah, 2021). The Rebozo technique helps maternity mothers to have a wider pelvic space so that delivery can be done faster because the baby becomes easier to go down the pelvis (Munafiah et al., 2020).

The results of the study of Iversen et al. (2017) show that the rebozo technique provides an

experience of non-pharmacological non-invasive methods used during childbirth. Women's experience of the rebozo technique performed during childbirth is physical and psychological. The women experienced that the rebozo technique improves pain management and is potentially conducive to the labor process as a harmless nonpharmacological method. The rebozo technique can be seen as a tool of cooperation between a woman, a midwife and the female partner.

When looking at previous studies, hypnobirthing and rebozo were applied separately to test their effect on labor duration and Apgar scores. This study tried to expand the scope of research (expand knowledge) and propose novelty by applying the application of hypnobirthing accompanied by rebozo to reduce the duration of delivery during II and Apgar scores. The application of hypnobirthing coupled with rebozo is expected to further strengthen the treatment in an effort to prevent prolonged delivery II and low baby Apgar scores. The study was conducted at BPM Midwife Dina Garut, who has conducted hypnobirthing training for pregnant women. In addition, midwives in the venue have also received training to perform rebozo techniques.

The goal to be achieved in this study is to determine the effect of hypnobirthing and rebozo administration on the duration of delivery during II and Apgar scores.

METHODS

Research is a quasy experiment, or also called controlled trial without randomization in the determination of the sample (Krishnan, 2019). The experimental design used was posttest only with control group design, where one group obtained treatment (X), compared to another group that did not get treatment (X) so that the effect of treatment (X) was obtained (Sinambela & Sinambela, 2022). In this study, the experimental group was given hypnobirthing and rebozo and the control group was only given hypnobirthing. The population in this study was all mothers giving birth at BPM Midwife Dina Garut in the period of November – December 2021.

The sample of 20 respondents was determined by purposive sampling, namely the determination of samples with certain considerations (Harsojuwono & Amata, 2020). The samples in this study were determined by the criteria of normal childbirth, with a normal baby's birth weight. The exclusion criteria are mothers with labor difficulties.

Research data is primary data, that is, data that has not been published and is first-hand information that is not changed by a person

(Taherdoost, 2021). The measurement of the duration of labor during II uses a stopwatch as a measuring instrument, and the Apgar score is used as an Apgar test.

The data analysis technique is carried out with an independent sample t test if the research data is normal data distribution, and the Mann Whitney test if the research data is not a normal data distribution. The data normality test was carried out with one sample Kolmogorov-Smirnov Test.

RESULT

Description of Research Data

In this study, there were two groups of samples, namely respondents who were given hypnobirthing and rebozo as an experimental group and respondents who were only given hypnobirthing as a control group. The characteristics of the respondents can be described in the following table:

Tabel 1
Description of Respondent Characteristics

Characteristics	Experimen Group		Control Group		χ^2	p
	f	%	f	%		
Age						
20 – 25 years	4	20,0	3	15,0	0,610	0,737
> 25 – 30 years	14	70,0	16	80,0		
> 30 – 35 years	2	10,0	1	5,0		
baby's birth weight						
2500 – 3000 g	7	35,0	5	25,0	0,556	0,757
> 3000 – 3500 g	8	40,0	10	50,0		
> 3500 – 4000 g	5	25,0	5	25,0		

Table 1 shows that based on age, the respondents of the experimental group were at most 20 – 25 years old, namely 14 respondents (70.0%), and at least > 30 – 35 years old, namely 2 respondents (10.0%). The respondents of the control group, at most aged 20 – 35 years, namely 16 respondents (80.0%), and the least aged >30 – 35 years, namely 1 respondent (5.0%). Based on the value of 2 of 0.610 and p of 0.737 ($p>0.05$), there is no difference in age characteristics in the experimen group and the control group.

Based on the birth weight of babies, respondents of the experimental group had the most babies with a birth weight of >3000 – 3500 grams, namely 8 respondents (40.0%), and the least had a baby with a birth weight of >3500 – 4000 grams, namely 5 respondents (25.0%). Control group respondents, most had babies with a birth weight of >3000 – 3500 grams, namely 10 respondents (50.0%), and those with babies with a birth weight of 2500 – 3000 grams and >3500 – 4000 grams, 5

respondents each (5.0%). Based on a value of 2 of 0.556 and p of 0.757 ($p>0.05$), there was no difference in the characteristics of the baby's birth weight in the experimental group and the control group.

The data in this study can be described in the following table:

Table 2 shows that the duration of delivery during time II in the experimental group was 10 – 25 minutes with an average of 16.95 minutes and a standard deviation of 3.76 minutes. In the control group, the duration of delivery during II was 15-40 minutes with an average of 27.50 minutes and a standard deviation of 6.79 minutes. Apgar's score range in the experimental group was 6.8 – 8.9 with an average of 7.43 and a standard deviation of 0.63. In the control group, the Apgar score range was 5.7 – 8.9 with an average of 7.31 and a standard deviation of 0.93.

Tabel 2
Description of Research Data

		the duration of labor	
Group		during II	Apgar Score
Experimen Group	Minimum	10,00	6,80
	Maximum	25,00	8,90
	Mean	16,95	7,43
	Std. Deviation	3,76	0,63
Control Group	Minimum	15,00	5,70
	Maximum	40,00	8,90
	Mean	27,50	7,31
	Std. Deviation	6,79	0,93

Data Normality Test

The results of testing the normality of the data can be described in the table as follows:

Tabel 3
Data Normality Test Results

Variabel	KS-Z	p	Result
Duration Of the labor During II (Experimen Group)	0,248	0,002	Tidak normal
Duration Of the labor during II (Control Group)	0,194	0,048	Tidak normal
Apgar Score (Experimen Group)	0,298	0,000	Tidak normal
Apgar Scoe (Control Group)	0,236	0,005	Tidak normal

Table 3 shows that all research data have an abnormal data distribution, indicated from the p-value < 0.05.

Data Analysis and Hypothesis Testing

Based on the distribution for all research data that is not normally distributed, the data analysis in this study was used by the Mann-Whitney test. The results can be summarized in the table as follows:

Tabel 4
Mann-Whitney Test Results

	the duration of labor during II	Apgar Score
Mann-Whitney U	40,000	190,000
Z	-4,420	-0,284
p	0,000	0,776

Based on the table above, hypothesis testing is carried out as follows:

First Hypothesis Testing

Table 3 shows that in the test of the duration of labor during II, a Z value of -4.420 and p of 0.000 was obtained. Based on the p-value < 0.05, it was concluded that hypnobirthing and rebozo administration affects the duration of delivery during II. The group given hypnobirthing and rebozo had a faster duration of delivery during II than the group that was only given hypnobirthing. The results of this study support the results of the research of Syswianti et al. (2020) and Rini (2010) which show that hypnobirthing affects the faster the duration of delivery during II.

Giving hypnobirthing and rebozo at the same time, will help speed up the delivery process during

II. Hypnobirthing can be used to face and undergo pregnancy and preparation for childbirth in a natural, calm, and comfortable way as well as the mental health of the fetus (Marliana et al., 2016). The Rebozo technique helps maternity mothers so that the pelvic space becomes wider so that childbirth can be done faster because the baby becomes easier to go down the pelvis (Munafiah et al., 2020). Convenience in carrying out childbirth will help the successful application of the rebozo technique so that the labor process also becomes faster.

Second Hypotesis Testing

Table 3 shows that in the Apgar score test, a Z value of -0.284 and p of 0.776 were obtained. Based on the p-value > 0.05, it was concluded that hypnobirthing and rebozo administration had no effect on Apgar's score. The results of this study

support the research of Putrianti & Karuniawati (2017) showing that hypnobirthing has no effect on apgar value.

Although the results were not significant, but when looking at the results of the study, it was seen that maternity mothers who got hypnobirthing and rebozo had a faster duration of delivery during II than maternity mothers who only got hypnobirthing.

One of the factors that made the results of the study insignificant was maternity mothers who did not fully believe in hypnobirthing, so they were unable to reduce the level of anxiety and tension in undergoing childbirth. Such anxiety and tension will affect the technique of success of the rebozo technique. The ineffectiveness of hypnobirthing and rebozo makes childbirth during II longer.

CONCLUSION

The results showed that the administration of hypnobirthing and rebozo had an effect on reducing the duration of delivery during II. Maternity mothers who were given hypnobirthing and rebozo had a lower duration of delivery during II compared to those who only did hypnobirthing. Hypnobirthing and rebozo have no effect on Apgar's score.

SUGESTION

Based on the results of the research above, midwives should make a learning video about hypnobirthing and rebozo techniques, so that it can be a lesson for pregnant women who visit to learn to apply hypnobirthing techniques, and for midwives to help maternity mothers in performing rebozo techniques. Pregnant women should be able to learn and practice hypnobirthing during pregnancy, so that they can apply it during the delivery process.

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IDENTIFICATION OF ALKALOIDS AND STEROIDS IN MORINGA OLEIFERA LEAVES AS A BREASTFEEDING

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ABSTRAK : IDENTIFIKASI ALKALOID DAN STEROID DALAM DAUN KELOR SAAT MENYUSUI

Latar belakang: Angka kematian merupakan salah satu indikator kesehatan yang penting dan mencerminkan derajat kesehatan di suatu wilayah. Angka Kematian Bayi (AKB) di Indonesia masih tinggi. Angka kematian bayi sebagian besar disebabkan oleh faktor nutrisi. Beberapa penyakit yang timbul akibat malnutrisi antara lain pneumonia, diare, dan perinatal. Pemberian Air Susu Ibu (ASI) eksklusif mampu menurunkan angka kesakitan dan kematian bayi. Alasan yang paling sering ditemukan pada ibu menyusui yang menghentikan pemberian ASI yaitu karena produksi ASI yang kurang. Pemanfaatan tanaman/sayuran yang berfungsi sebagai galaktogogue dapat digunakan sebagai alternatif untuk meningkatkan produksi ASI. Daun kelor merupakan salah satu tanaman yang sering digunakan masyarakat untuk meningkatkan produksi ASI.

Tujuan: Tujuan penelitian ini yaitu mengidentifikasi kandungan alkaloid dan steroid pada daun kelor sebagai upaya untuk melancarkan produksi ASI.

Metode: Metode dalam penelitian ini yaitu melakukan uji laboratorium pada daun kelor segar berwarna hijau muda sampai hijau agak tua sebanyak 100 gram. Skrining alkaloid menggunakan pereaksi Mayer dan Dragendorff, sedangkan steroid dengan pereaksi asam asetat, anhidrat, dan H₂SO₄ pekat.

Hasil: Hasil penelitian didapatkan daun kelor (*Moringa oleifera*) menunjukkan terdapat kandungan senyawa alkaloid dan steroid.

Simpulan: Pemanfaatan daun kelor merupakan salah satu alternatif yang dapat digunakan untuk mengatasi masalah produksi ASI yang kurang, selain murah dan mudah didapatkan.

Saran: Peneliti selanjutnya disarankan dapat melakukan penelitian terkait inovasi pengembangan pengolahan daun kelor terhadap kelancaran ASI yang langsung diaplikasikan pada ibu-ibu menyusui untuk mencegah kegagalan pemberian ASI eksklusif karena produksi ASI kurang.

Kata Kunci: Daun kelor, Alkaloid dan Steroid

ABSTRACT

Background: The mortality rate is an important health indicator and reflects the degree of health in an area. The Infant Mortality Rate (IMR) in Indonesia is still high. The infant mortality rate is largely due to nutritional factors. A number of disease symptoms that arise due to malnutrition include pneumonia, diarrhea, and perinatal. Exclusive breastfeeding can reduce infant morbidity and mortality. The most common reason found in breastfeeding mothers who stop breastfeeding is due to insufficient milk production. Utilization of plants/vegetables that function as galactogogue can be used as an alternative to increase milk production. Moringa leaves are one of the plants that people often use to increase milk production.

Purpose: The purpose of this study was to identify the alkaloid and steroid content in Moringa leaves as an effort to expedite milk production.

Method: The method in this study namely you did a laboratory test on fresh colored moringa leaves green young to slightly dark green as much as 100 grams. Alkaloid screening used Mayer's and Dragendorff's reagents, while steroids used acetic acid, anhydrous and concentrated H₂SO₄ reagents.

Results: The results showed that the leaves of Moringa (*Moringa oleifera*) showed the presence of alkaloid and steroid compounds.

Conclusion: Utilization of Moringa leaves is an alternative that can be used to overcome the problem of insufficient milk production, besides being cheap and easy to obtain.

Suggestions: Further researchers are advised to conduct research related to the innovation of developing moringa leaf processing for the smoothness of breast milk which is directly applied to breastfeeding mothers to prevent failure of exclusive breastfeeding due to insufficient milk production.

Keywords: Moringa leaves, Alkaloids and Steroids

INTRODUCTION

The mortality rate is an important health indicator and reflects the degree of health in an area. The Infant Mortality Rate (IMR) in Indonesia in 2017 is still high at 24 per 1,000 live births (Ministry of Health RI, 2017b). Global commitment in the Sustainable Development Goals (SDGs) in the 4th goal sets the target related to IMR deaths to 23 per 1,000 live births (BPPN, 2011). Infant mortality is largely due to nutritional factors, ie as big 53%. A number of diseases that arise due to malnutrition include pneumonia (20%), diarrhea (15%), and perinatal (23%) (Ministry of Health RI, 2014).

Exclusive breastfeeding can reduce infant morbidity and mortality (Biks et al., 2015; Lenja et al., 2016). Optimal breastfeeding can prevent 1.4 million deaths worldwide in children under five every year and reduce deaths due to acute respiratory infections and diarrhea 50-95% (Horta BL, 2013). Suboptimal breastfeeding causes 45% of neonatal deaths due to infectious infections, 30% of deaths due to diarrhea, and 18% of deaths due to acute respiratory disorders in children under five years of age in developing countries (Mekuria & Edris, 2015). The percentage of babies who are exclusively breastfed until the age of 6 months is 29.5% and babies who are breastfed aged 0-5 months is 54% (Ministry of Health RI, 2017a). The coverage of exclusive breastfeeding in NTB Province is above the national target, which is 82.68%. The lowest breastfeeding coverage in NTB is the City of Mataram 70.30% (NTB Provincial Health Office, 2018).

Breast milk is the first, main and best food for neonates, which is natural and contains many nutrients needed in the process of growth and development of infants, especially up to 6 months of age. However, insufficient milk production is a common complaint expressed by mothers, especially in the first week of childbirth (Asnidawati & Ramdhan, 2021; Margareth ZH, 2016). Zakaria's research (2016) reported that 38% of breastfeeding mothers stopped breastfeeding on the grounds that milk production was cut off or lack of milk production (Zakaria et al., 2016). A preliminary survey conducted by Indrayani (2015) on 39 respondents from 16 provinces in Indonesia showed that 17.9% of respondents stated that breast milk had not appeared in the first week of breastfeeding, 33.3% stated that the amount of breast milk was small, and 2.6% stated that breast milk did not come out at all during the lactation period. Most (69.23%) of mothers who complained of insufficient milk supply were primiparous women (Indrayani D, Gustirini R, 2015).

In Indonesia there are many plants/vegetables that are believed to increase milk

production or function as a galactagogue, including fennel, kelor leaves, katuk leaves, young papaya fruit, klabet, aniseed, torbangun, beluntas, lempuyang, spinach and cassava leaves (Indonesian Pediatrician Association, 2010; Wulandari ET, 2020). Research conducted by Handayani (2021) explains that the plants most widely used as breastfeeding boosters are katuk leaves (50.4%), moringa leaves 38.2%), turi leaves (8.9%), and spinach (2.4%) (Handayani et al., 2021). Most of these ingredients have not been scientifically evaluated but are traditionally safe and effective (Indonesian Pediatrician Association, 2010).

World Health Organization (WHO) has also recommended the use of natural ingredients for traditional medicine as an effort to improve health (promotive), disease prevention (preventive), and treatment (curative). The use of natural ingredients is considered safer than chemical drugs and has relatively fewer side effects if used properly (World Health Organization, 2019). The purpose of this study was to identify the alkaloid and steroid content in Moringa leaves as an effort to expedite milk production.

Based on this background, researchers are interested in conducting research on the identification of alkaloid and steroid content in Moringa leaves (*Moringa Oleifera*) as a breast milk booster.

RESEARCH METHODOLOGY

This type of research is laboratory observation research to demonstrate the identification of alkaloid and steroid compounds in Moringa leaves (*Moringa oleifera* L.).

This research was conducted in August 2022 at Muhammadiyah University of Mataram Pharmacy Laboratory.

The materials used in this study were colored Moringa leaves green young to slightly dark green as much as 100 grams.

The research procedure used to check the steroid content was by the Liebermann-Burchard reaction, in which 2 mL of the test solution was evaporated in a porcelain cup. The residue is dissolved with 0.5 mL of chloroform, then 0.5 mL of anhydrous acetic acid is added. 2 mL of concentrated sulfuric acid was then added through the tube wall. The formation of a brown or violet ring at the boundary of the solution indicates the presence of triterpenoids, whereas a greenish blue ring appears indicating the presence of steroids (Ciulei J, 1984).

Examination of the alkaloid content, namely 2 mL of the test solution was evaporated over a porcelain cup. The resulting residue was then

dissolved with 5 mL of 2 N HCL. The solution obtained was divided into 3 test tubes. The first tube was added with 3 drops of 2N HCl which served as a blank. The second tube was added 3 drops of Dragendorff's reagent and the third tube was added 3 drops of Mayer's reagent. An orange precipitate formed in the second tube and a yellow precipitate in the third tube indicated the presence of alkaloids (Farnworth, 1996).

RESEARCH RESULT

Checking the alkaloid and steroid compounds of Moringa leaves was carried out at the Mataram Muhammadiyah University Laboratory. The results of checking alkaloids and steroids in Moringa leaves can be seen in Table 1.

Table 1
Results of Phytochemical Screening of Alkaloids and Steroids of Moringa Leaves

Class	Prereaction	Observation	Results
Alkaloids	Mayer	No formation of yellow/white precipitate	+
	Dragendorff	No formation of orange precipitate	+
Steroids/triterpenoids	Acetic anhydrous acid, concentrated H ₂ SO ₄	Formation of a brownish blue-green ring	+

The results of phytochemical screening on Moringa leaves (*Moringa oleifera*) showed the presence of alkaloid and steroid compounds.

DISCUSSION

Moringa is a type of medicinal plant from the Moringaceae family which is rich in nutrients. Nutrient content such as minerals, vitamins and amino acids are spread in all parts of the Moringa plant. All parts of the moringa plant can be consumed, from the leaves, bark, flowers, fruit, to the roots (Septadina et al., 2018; Toripah, 2014). All parts of the moringa plant are traditionally used for different purposes, but it is generally the leaves that are used most often (Leone et al., 2015).

Moringa leaves are similar to katuk leaves, round in shape and green in color. Moringa leaves are delicious to eat in a variety of dishes. The superiority of Moringa leaves lies in its nutritional content, especially the mineral and vitamin groups. Every 100 g of Moringa leaves contain 3390 SI of vitamin A, two times higher than spinach and thirty times higher than green beans. Moringa leaves are also high in calcium, around 440 mg/100 g, and phosphorus 70 mg/100 g (Zakaria et al., 2016).

Results of phytochemical tests conducted in this study showed that Moringa leaves contain alkaloids and steroids. This is in line with research conducted by Tekle (2015) which showed the presence of alkaloids, tannins, flavonoids, polyphenols, saponins, and essential oils in Moringa leaf extract (Tekle et al., 2015). Similar research too shows that there is alkaloids, flavonoids, saponins, phenols, steroids/triterpenoids, and tannins in Moringa leaf extract (Dwika et al., 2016; Yulianto, 2020; Zulfiah et al, 2020).

Theoretically, alkaloids and steroids are compounds that have a lactagogue effect, where these compounds have the potential to stimulate the hormones oxytocin and prolactin (Princess, 2021; Sukmawati, 2019). Compounds that have a lactagogum effect most effective in increasing and increase milk production by directly stimulating the protoplasmic activity of the secretory cells of the mammary glands, stimulating the secretory nerves in the mammary glands so that milk production increases, or stimulating the hormone prolactin acting on alveoli epithelial cells (Alindawati et al., 2021; Raguindin et al., 2014).

Moringa leaves (*Moringa oleifera*) is a galactagogue food that has a high micronutrient content compared to other galactagogue foods, the nutritional content such as phytosterol compounds, polyphenols, and steroids (lactagogum effect) plays a role in the prolactin reflex and increases prolactin hormone levels, thereby stimulating the alveoli to produce ASI (Damayanti A, 2022; Rochmayanti NS, 2022). The alkaloid content contained in Moringa leaves works synergistically with the hormone oxytocin. Alkaloids have a function that directly acts on all smooth muscles. When smooth muscle contracts, there will be milk ejection and an increase in the number and diameter of the alveoli on average is proportional to the increase in milk produced (Rosalinda Sinaga, 2020).

Moringa leaves are one of the answers to overcome the problem of nutritional imbalances faced by most of the world's people (Rani et al, 2019). Utilization of Moringa leaves to increase exclusive breastfeeding can be an alternative that is cheap, easy and down-to-earth (local wisdom) because Moringa leaves grow naturally in almost

every area. In traditional markets, Moringa leaves are sold at very cheap prices and can be reached by all levels of society (Sormin, 2018).

The use of Moringa leaves in increasing milk production can be processed into vegetables, or you can also use Moringa leaf powder. The aroma of Moringa leaves is rather unpleasant, but the aroma is reduced when the Moringa leaves are processed into clear vegetables or bobor vegetables (Zakaria et al., 2016). Consumption of Moringa leaves can also be started from the third trimester of pregnancy as a preparation for breastfeeding.

CONCLUSION

Utilization of Moringa leaves is an alternative that can be used to overcome the problem of insufficient milk production, besides being cheap and easy to obtain. Based on the research results menshow Moringa leaves contain alkaloid and steroid compounds that play a role in increase and increase milk production.

SUGGESTION

Further researchers are advised to conduct research related to the innovation of developing moringa leaf processing for the smoothness of breast milk which is directly applied to breastfeeding mothers to prevent failure of exclusive breastfeeding due to insufficient milk production.

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MANAGEMENT OF MIDWIFE IN PREGNANT WOMEN CHRONIC ENERGY DEFICIENCY (CED) FROM WOMEN'S EMPOWERMENT PERSPECTIVE

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ABSTRAK : PENATALAKSANAAN BIDAN PADA IBU HAMIL KURANG ENERGI KRONIS (KEK) DARI PERSPEKTIF PEMBERDAYAAN PEREMPUAN

Berbagai program telah dilakukan di puskesmas oleh bidan untuk mengatasi masalah ibu hamil dengan KEK sejak lama, seperti pemberian makanan tambahan bagi ibu hamil yang sudah di galakkan di semua Puskesmas. Pentingnya mengembangkan model penatalaksanaan bidan terhadap ibu hamil dengan KEK menjadi latar belakang penulis untuk memotret apakah penatalaksanaan KEK oleh bidan sudah komperhensif dikaitkan dengan penyebab KEK dan pemberdayaan perempuan. Undang-Undang Kebidanan No 4 Tahun 2019 memberikan Amanah kepada bidan dalam perannya yang salah satunya merupakan pemberdayaan masyarakat

Tujuan penelitian yang akan dilakukan adalah menganalisis penatalaksanaan ibu hamil KEK oleh bidan dengan perspektif pemberdayaan perempuan

Metode : Penelitian ini menggunakan metode descriptive study dengan pendekatan *cross sectional*, dua variable dikembangkan yaitu penatalaksanaan bidan pada ibu hamil KEK dari tahap pengkajian hingga monitoring dan evaluasi dan variable pengetahuan kami menghubungkan keduanya untuk mengetahui lebih dalam apakah ada hubungan yang bermakna. Analisis bivariat menggunakan cross tab analisis dengan nilai P yang digunakan <0.05.

Hasil Analisis univariat Sebagian besar bidan belum melakukan penatalaksanaan ibu hamil KEK berdasarkan aspek pemberdayaan perempuan, hasil analisis bivariate $P > 0,005$ menunjukan tidak ada hubungan yang bermakna antara penatalaksanaan bidan dengan pengetahuan oleh karena banyak faktor yang mempengaruhi pengetahuan ibu hamil kurang energi kronis.

Kesimpulan : Sebagian besar penatalaksanaan bidan pada ibu hamil KEK dari dimensi pemberdayaan perempuan yang terdiri dari pengkajian, penetapan diagnosa, monitoring dan evaluasi belum sesuai, tidak ada hubungan penatalaksanaan bidan dengan pengetahuan ibu hamil KEK

Saran : Saran disampaikan kepada bidan agar didalam memberikan asuhan kebidanan kepada ibu hamil yang mengalami kurang energi kronis dapat mempertimbangkan aspek pemberdayaan perempuan, Bagi pengambil kebijakan pentingnya berkolaborasi dan membuat sosialisasi penatalaksanaan bidan dari aspek pemberdayaan perempuan.

Kata Kunci : Penatalaksanaan Bidan, Pemberdayaan, Kehamilan KEK

ABSTRACT

Introduction :Various programs have been carried out at the puskesmas by midwives to overcome the problems of pregnant women with SEZ for a long time, such as providing additional food for pregnant women which has been promoted in all Puskesmas. The importance of developing a midwife management model for pregnant women with Chronic Enegy Deficiency is the background of the author to photograph whether the management of Chronic Enegy Deficiency by midwives has been comprehensively associated with the causes of Chronic Enegy Deficiency and empowering women. Midwifery Law No. 4 of 2019 provides mandates to midwives in their roles, one of which is community empowerment

The purpose of the research to be carried out is to analyze the management of pregnant women with chronic energy deficiency by midwives with the perspective of women's empowerment

Methods: This study used a descriptive study method with a cross sectional approach, two variables were developed, namely the management of midwives for pregnant women from the assessment stage to monitoring and evaluation and our knowledge variable connected the two to find out more deeply whether there was a significant relationship. Bivariate analysis using cross tab analysis with P value used <0.05.

Results of univariate analysis Most midwives have not managed Chronic Energy Deficiency pregnant women based on the aspect of women's empowerment, the results of bivariate analysis $P > 0.005$ showed there was no significant relationship between midwifery management and knowledge because many factors influenced the knowledge of pregnant women with chronic energy deficiency.

Conclusion: Most of the management of midwives in pregnant women with Chronic Energy Deficiency from the dimension of women's empowerment which consists of assessment, diagnosis, monitoring and evaluation is not appropriate, there is no relationship between midwife management and knowledge of pregnant women with Chronic Energy Deficiency.

Suggestion: Suggestions are submitted to midwives so that in providing midwifery care to pregnant women who experience chronic energy deficiency, they can consider aspects of women's empowerment. For policy makers it is important to collaborate and make socialization of midwife management from the aspect of women's empowerment.

Keywords: Chronic Energy Deficiency , Empowerment , Midwife Management, Pregnancy

INTRODUCTION

One indicator in measuring the nutritional status of a particular community is the nutritional status of pregnant women. Malnutrition occurs when a pregnant woman's nutritional intake from food is not balanced with her body's needs. The results of the 2018 Riskesdas stated that the prevalence of Chronic Energy Deficiency (CED) in pregnant women was 17.3%. SEZ in NTT ranks highest compared to other provinces with a prevalence of 36.8%. (Ministry of Health RI 2018) Data from the Tarus Health Center in 2019 there were 125 pregnant women (9.36%) out of a total of 1335 who experienced Chronic Energy Deficiency (CED), while in 2020 it increased to 216 pregnant women with CED or 19.72% of 1095 people. (Puskesmas Tarus n.d.) Ministry of Health, in 2016 conveyed that CED in pregnant women causes indirect maternal death because it reduces the strength of the muscles that assist childbirth resulting in bleeding, prolonged parturition and anemia. In infants, miscarriages, premature births, birth defects, low birth weight, and short toddler physical growth (stunting) can occur. (Bakri 2021). The cause of SEZ states that there is a significant influence between food intake, education level, occupation, knowledge, family income, age, parity, utilization of ANC services, and food availability on chronic energy deficiency in pregnant women (Purwanto, Masni, and Bustan 2020; Rachmawati, Dewi, and Widyaningsih 2019; Tejayanti 2019). Empowering women can increase women's knowledge and health status (Susanti et al. 2017).

Research on the management of CED in pregnant women has been carried out by several researchers before, but what has become the focus of several studies such as in the publication submitted by Santi, 2021 is how midwifery management uses the Varney approach. Other

researchers describe how the management of CED pregnant women uses a more holistic but has not yet detailed aspects of women's empowerment as proposed in the author's current research. (Praja and Karyus 2020). Midwives have carried out various programs at the puskesmas to address the problems of pregnant women with CED for a long time, such as providing additional food for pregnant women which has been encouraged in all puskesmas. The importance of developing a midwife management model for pregnant women with CED is the author's background for photographing whether the management of CED by midwives is comprehensive in relation to the causes of CED and women's empowerment. Midwifery Law No. 4 of 2019 gives a mandate to midwives in their roles, one of which is community empowerment.

The purpose of the research to be carried out is to analyze the management of pregnant women with CED by midwives with the perspective of women's empowerment in the work area of the Tarus Public Health Center, Kupang Regency in 2022 with the specific objective of identifying the assessment of pregnant women with CED by midwives in the working area of the Auxiliary Health Center from the perspective of women's empowerment, Identifying diagnosis determination midwives for CED pregnant women in the working area of the Tarus Public Health Center, Kupang Regency from the perspective of women's empowerment, analyzing the management of nutrition by midwives for CED pregnant women on the results of their evaluation and monitoring from the perspective of women's empowerment, and analyzing the relationship between midwives' management of CED pregnant women from the perspective of women's empowerment with knowledge of CED pregnant women about CED

RESEARCH METHOD

This research is a descriptive observational study with a cross-sectional study in which the researcher observes the midwife's management of chronic energy deficient pregnant women at the health center and then verifies and studies the midwife's care documents contained in the MCH handbook, patient status and cohort of mothers related to midwife management steps. in general and approaches to women's empowerment.

The variables in this study are divided into two, namely the management of midwives is defined as the management of midwives from assessment, determination of diagnosis and management, to evaluation and monitoring which has a Women's Empowerment approach while the Behavior Variable of pregnant women is defined in terms of things that pregnant women do to improve their health, the dependent variable is the knowledge of pregnant women about cake. Descriptive analysis of univariate variables, bivariate analysis, namely the management of CED and knowledge of pregnant women, researchers used Chi Square which was stated to be significant if the results of the Cross Table showed a value of $P < 0.05$. The population in this study were all pregnant women diagnosed with Chronic Energy Deficiency from January to March with no other chronic diseases such as malaria, tuberculosis and so on in 2022 with a total of 64 people, because the population is less than 100, the sample in this study is the total population, in practice due to various things encountered during the study in terms of time and the sample who were not willing to be respondents, 44 pregnant women with CED were determined to be the sample in this study.

RESEARCH RESULT

Table 1

Frequency Distribution of Characteristics of Pregnant Women with Chronic Energy Deficiency in the Management of Midwives in CED Pregnant Women based on the dimensions of Women's Empowerment in the working area of the Tarus Health Center, Kupang Regency

Characteristics	N	%
Age		
<20 dan >35 Year	11	25
20-35 Year	33	75
Ethnic Group		
Timor	27	61
Rote	5	11

Sumba	1	2
Alor	2	5
Flores	3	7
Lainnya	5	11
Sabu	1	2
Last Education		
No School	1	2
Elementary School	10	23
Junior High School	12	27
Senior High School	19	43
Bachelor	2	5
Income of Fammily		
Under Regional Minimum wage	40	91
Above Regional Minimum wage	4	9

Table 2

Frequency Distribution of Midwife Assessments in the Management of Midwives in with Chronic Energy Deficiency of Pregnant Women based on the dimensions of Women's Empowerment in the working area of the Tarus Health Center, Kupang Regency

Distribution	Frekuensi	Percentage
Pengkajian		
Incomplete	17	38
Complete	27	62
Diagnosis		
Incomplete	40	91
Complete	4	9
Management and Evaluation		
Incomplete	40	90.9
Complete	4	6.8

Table 3

Description of the Complete Management and Knowledge of Cronic Energy Deficiency Pregnant Women based on the dimensions of Women's Empowerment in the working area of the Tarus Health Center, Kupang Regency

Description	Frekuensi	Percentage
Knowledge		
Low	30	68
Moderate	1	2
High	13	30
Knowledge Ibu Hamil CED		
Low	30	68
High	14	32

Table 4

Knowledge of CED Pregnant Women and Management of Midwives in CED Pregnant Women based on the dimensions of Women's Empowerment in the working area of the Tarus Health Center, Kupang Regency

Knowledge		Knowledge		Total
		Low	High	
Management of Midwifery Care from Assessment to Evaluation based on the Dimensions of Women's Empowerment	Incomplete	21	9	30
	Complete	9	4	13
Uji Silang Chi Square		0.07		

DISCUSSIONS

The problem of chronic energy deficiency in pregnant women is closely related to the mother's age, number of parities, level of education, knowledge, (Widyawati and Sulistyoningtyas 2020). This research is related to the empowerment of mothers as women in the family so that the midwives' management descriptions will be compared according to the perspective of women's empowerment but remain in the management guidelines for midwives provided by the Indonesian Ministry of Health. The existence of various limitations carried out by midwives in providing comprehensive midwifery care gives the idea that it is important to see management from other aspects that allow midwives to help improve maternal health. The concept that health problems in the community is not only the responsibility of health workers but is the responsibility of the government from the center to the regions, as well as the community itself which includes the family and the mother as a member of the family.

Community empowerment, which includes women's empowerment, is one of the answers to the various limitations that exist in health facilities, namely the dimensions of aspects of resources, personnel, and facilities. Empowerment is interpreted as a process of obtaining power, strength or ability from those who have power to those who are less or less empowered. (Sulistiyani 2004). Batliwala (1994) cited by (Odutolu et al. 2004). Management of CED in pregnant women by midwives based on the perspective of women's empowerment is the active participation of women, in this case pregnant women who experience CED, are able to empower them to process, utilize the resources around them to produce benefits for the welfare of women and their families, especially to improve health status through maximum nutritional adequacy.

As for improving the health status of women with a women's empowerment approach, it has been carried out, namely: 1). Health education for women to improve health status which can increase women's

knowledge about their health (Susanti et al. 2017). 2). Increasing the values of gender equality in society towards women. 3). Improving women's health by empowering women in the economic sector. (Siswati et al. 2017).

The development of the concept of managing CED for pregnant women based on the perspective of women's empowerment is intended to look at the role and function of midwives in the management of CED-based pregnant women for the benefit of empowering women. The many factors that influence the nutritional status of pregnant women form the basis of the empowerment aspect. The assessment format used for pregnant women is in accordance with the assessment format that has been published in the midwifery documentation book by Wildan and Hidayat (2008), and determination of the diagnosis according to the nomenclature of obstetric diagnoses in pregnancy by Wariyaka and Baso (2021). The factor-based management of CED that influences the incidence of CED in pregnant women (2018) is added to management based on women's empowerment (Susanti et al. 2017), namely the approach to empowering women in health midwives.

The development of the concept of managing CED for pregnant women based on the perspective of women's empowerment is intended to look at the role and function of midwives in the management of CED-based pregnant women for the benefit of empowering women. The many factors that influence the nutritional status of pregnant women form the basis of the empowerment aspect. The assessment format used for pregnant women is in accordance with the assessment format that has been published in the midwifery documentation book by Wildan and Hidayat (2008), and determination of the diagnosis according to the nomenclature of obstetric diagnoses in pregnancy by Wariyaka and Baso (2021). The factor-based management of CED that influences the incidence of CED in pregnant women (2018) is added to management based on women's empowerment (Susanti et al. 2017), namely the approach to empowering women in health midwives.

The results of the study present characteristic aspects in the context of maternal demographics including age, education level, including the area of origin of pregnant women, which is related to beliefs based on the region of origin of pregnant women known as the Diaman tribe related to food taboos for pregnant women which can affect nutritional intake in mothers the. Another study was also carried out by us relating to family income, namely the total family real income within 1 month compared to the provincial minimum wage (UMP) category.

The age of pregnant women in table 1 of CED for pregnant women is mostly in the reproductive age range of 20-35 years, namely 75 percent of all mothers, including mothers aged less than 20 years and more than 35 years. The results of previous studies proved that younger or older ages have a greater chance of experiencing diabetes than reproductive age because of the physiological factors of the reproductive system that are not optimal compared to the recommended age, but in this study the researchers did not correlate the age factor with the incidence of CED in mothers. statistically pregnant. There are differences in the results of this study because the incidence of CED is not only influenced by one factor but by several other factors. (Tilahun, Fufa, and Tadesse 2022)

The results of the study in Table 1 also show that the majority of pregnant women are from Timorese. The importance of presenting this aspect is based on research by (Ayele et al. 2020) where there is a significant relationship related to beliefs traditionally limiting foods such as eggs, milk and dairy products, avocados for women, the presence of weak nutrition education and malnutrition screening programs, daily consumption of locally prepared alcoholic beverages called "Cheka", low socioeconomic status, and no good knowledge of agriculture for utilization by the mother were found to be obstacles for malnourished women. usually the Timorese have some restrictions as previously conveyed by Kencanawati, 2016 that this prohibition applies to pregnant women themselves and their families as for some, namely pregnant women are prohibited from eating shelled corn, roots or rice crusts that have dried or charred after cooking, proteins such as eggs and meat are killed, but when the meat The ones that have been processed into shredded or jerky can be eaten but they are expensive. The results of this study and what studies have been submitted by previous researchers provide input to midwives on the importance of studies related to ethnicity and dietary restrictions for pregnant women with small children, so that the

management is more based on the causes of the mother.

Studies on the educational status of pregnant women who experience CED are also presented in Table 1, starting from the most basic Kindergarten to the secondary and tertiary education levels. The background of the highest level of education in this study was pregnant women who had graduated from high school (SMA). In theory, the higher a person's educational status, the higher the ability of pregnant women to access various information and increase their knowledge. low level of education, this research is hoped as a reference that pregnant women who are affected by CED have a variety of educational levels ranging from lowest to middle, and in line with previous research (Widyawati and Sulistyoningtyas 2020). Pregnant women who have a higher level of education become a midwife's strength in carrying out management, which becomes easier in terms of understanding and comprehension in providing information and guidance.

Midwives' assessment of pregnant women Chronic energy deficiency based on women's empowerment was developed by researchers with several items consisting of whether midwives have ever asked about the decision-making process in the family, whether there has been a midwife's assessment since the mother experienced CED regarding the use of the mother's home yard is it possible to plant supporting plants maternal and family nutrition. In the aspect of diagnosis, has it ever been stated that the mother has chronic energy malnutrition due to an inadequate diet of pregnant women, due to a lack of knowledge about nutrition and food, because before pregnancy the pregnant woman was thin, lack of blood, there is a possibility of gender inequality in the family, the influence of other factors or social culture. In the analysis per item of the questionnaire, the assessment and diagnosis by midwives is still far from the standard procedure, especially when it is developed with the concept of women's empowerment. Midwives do it based on the standards in the puskesmas, only with the Upper Arm Circumference (LILA).

Midwifery studies must be rational and comprehensive. Characteristics of pregnant women who experience chronic energy deficiency are identified and reported very much, but it is still very limited by midwives. Physically, the assessment required is the mother's hemoglobin status, body mass index, assessment of the mother's weight before pregnancy, total maternal weight gain according to body mass index. The results of the study revealed that midwives' assessment of pregnant women with CED was not in accordance

with what should be done, although there were midwives who reviewed it accordingly, some even did not. (Schulz and Wirtz, 2021).

Management of Chronic Energy Deficiency pregnant women by midwives is presented in the Guidelines for Managing Chronic Energy Deficiency (CED) in Pregnant Women. consists of assessing the determination of diagnosis, management and evaluation (Ministry of Health RI 2015). These guidelines and references should be a reference for midwives in providing health services to pregnant women. The management of midwives as measured by researchers in this study was whether during the nutrition intervention for pregnant women midwives provided nutrition education and counseling with the aim of eating behavior for pregnant women, did midwives collaborate with nutritionists to calculate energy requirements for pregnant women, provided diet according to individual needs and whether there is provision of additional food in accordance with the nutritional needs of each individual. Analysis per item of midwife intervention found that pregnant women who had been diagnosed with CED, midwives provided additional food in the form of biscuits that had been prepared by the puskesmas, then counseling was given in detail, there was no good communication between midwives and nutritionists to be able to calculate the dietary and nutritional needs of each of these mothers.

The monitoring and evaluation aspect consists of two questions. For the aspect of compliance monitoring, this is illustrated by the adherence of mothers in consuming Iron Tablets, the adherence of pregnant women in consuming PMT and monitoring of the increase in body weight of pregnant women with CED who receive PMT. The comments given by the midwife were that monitoring of iron and weight gain was carried out well because it was a regular procedure during repeat visits, while monitoring related to adherence to consuming additional food was still lacking because biscuits were brought home and no monitoring was developed by the puskesmas to oversee this. The results of research related to supplementary feeding by midwives were evaluated and proven that the effect of supplementary feeding to mothers could not improve the nutritional status of pregnant women, only 13 percent of all samples experienced it, while the rest did not experience significant changes. This study also conveyed that the causes of CED pregnant women who did not experience an increase in nutritional status after supplementary feeding were diet, food consumption, health status, economy, internal health status including work and knowledge. (Nugrahini et al. 2014), different from what was

presented Nugrahini said that giving supplemental food for the recovery of pregnant women is actually quite effective and has an impact on pregnant women to improve nutritional status, especially the maximum upper arm circumference, but requires recommendations to improve monitoring and assessing output whether it has been successful. (Pastuty, KM, and Herawati 2018)

The final management of midwives for Chronic Efficiency Defisiensi pregnant women is to evaluate the achievement of all midwives' activities for CED pregnant women, marked by the reported number of pregnant women who received nutrition education, nutritional counseling, received PMT, increased body weight and increased hemoglobin levels for CED pregnant women with anemia . Researchers did not get a complete report from midwives as part of the concept of managing CED pregnant women. Reporting carried out by midwives is in accordance with the routine reporting carried out by midwives every month in accordance with the main responsibilities. The importance of documentation of midwifery care for pregnant women with CED also does not clearly describe specific midwifery care for these mothers apart from providing information about fulfilling a balanced diet and adequate rest, as stated in the paragraph above that the findings are related to the lack of monitoring or the need for monitoring and evaluation by midwives needs to be improved and if necessary can invite cadres to become a team in managing pregnant women so that the programs and care being carried out can be evaluated whether they are effective including getting input on strategies that need to be developed to achieve maximum goals. (Pastuty, KM, and Herawati 2018). Various activities involving inviting cadres have been delivered in a number of activities including providing midwifery care, empowering pregnant women to assist midwives in carrying out community tasks related to maternal health itself. (Tabelak, Boimau, and Wariyaka 2021)

The result of a women's empowerment movement is an increase in women's knowledge so that they are able to empower what they have to get optimal health. (Hermawati 2019). The results of the study in table 3 above show that most pregnant women lack knowledge about the concept of chronic energy deficiency in pregnant women. Question points that are still lacking are what causes CED, the mother does not understand what impact the mother and fetus will have if they experience CED during pregnancy and the mother also does not understand the concept of empowerment related to CED. The concept of empowerment concerns the factors that

exist in the mother, culture, support, gender perceptions, decision-making patterns, all of which have a relationship in making mothers improve their health. whether to overcome the problem of obesity, all the factors that exist in the mother can help her meet her nutritional needs thereby reducing the impact of CED, including in the aspect of women's empowerment. Pregnant women also do not understand that what they have, what has become their culture or habits around them can help them or make her be in good mother's health or less. a The results showed that pregnant women lack knowledge about the main maternal risk factors, pregnant women admit to receiving little information during gynecological examinations and therefore, some do things they do not know for example smoking so that they need an intervention design in services to increase the level of women's knowledge and to promote appropriate behavior in relation to major risk factors in pregnancy.(Esposit et al. 2015).

COCLUSION

Most of the management of midwives for pregnant women with CED from the dimension of women's empowerment which consists of assessment, diagnosis, monitoring and evaluation is not in accordance with the guidelines for the management of CED for pregnant women.

SUGESTION

Suggestions were conveyed to midwives so that in providing midwifery care to pregnant women who experience chronic energy deficiency they can consider aspects of women's empowerment. For policy makers it is important to collaborate and socialize the management of midwives from the aspect of women's empowerment.

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RELATIONSHIP OF INJECTABLE CONTRACEPTIVE USE DEPO MEDROXYPROGESTERONE ACETATE WITH BLOOD PRESSURE ACCEPTOR KB IN THE WORK

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ABSTRAK : HUBUNGAN PENGGUNAAN KONTRASEPSI SUNTIK DEPO MEDROXYPROGESTERONE ASETAT DENGAN AKSEPTOR TEKANAN DARAH KB DI KERJA

Latar Belakang Alat kontrasepsi yang sering menjadi pilihan PUS adalah alat kontrasepsi suntik. Kontrasepsi suntik merupakan metode kontrasepsi jangka panjang yang bekerja lama (panjang) dan sangat efektif, penggunaannya sangat praktis, harganya murah, aman dan tidak memerlukan penggunaan setiap hari atau setiap kali berhubungan. Prevalensi hipertensi berdasarkan diagnosis dokter di Provinsi Lampung tahun 2020 sebesar 15,10%, dengan kejadian tertinggi di Kabupaten Way Kanan sebesar 25,9% dan terendah di Kabupaten Tanggamus sebesar 10,0% sedangkan Kabupaten Lampung Selatan sebesar 12,5%.

Tujuan penelitian ini adalah untuk mengetahui hubungan penggunaan kontrasepsi suntik depo medroxyprogesterone acetate dengan tekanan darah akseptor KB di wilayah kerja Puskesmas Penengahan Kabupaten Lampung Selatan.

Metode Jenis penelitian ini adalah kuantitatif dengan pendekatan cross sectional. Populasi dalam penelitian ini adalah ibu akseptor KB suntik 3 bulan dengan sampel sebanyak 152 responden dengan teknik total sampling. Pengumpulan data dengan kuesioner dan pengukuran tekanan darah. Analisis data adalah univariat dan bivariat (chi square).

Hasil penelitian menunjukkan bahwa 120 responden (78,9%), dengan penggunaan alat kontrasepsi suntik dari Depo Medroxy Progesterone Acetate selama 2-3 tahun, dan 126 (82,9%).

Kesimpulan Ada hubungan antara penggunaan alat kontrasepsi suntik di Depo Medroxy Progesterone Acetate dengan tekanan darah akseptor KB di wilayah kerja Puskesmas Penengahan Kabupaten Lampung Selatan dengan nilai ($p\text{-value} = 0,036 < 0,05$).

Saran kepada Puskesmas agar dapat memberikan edukasi kepada akseptor KB baru dan lama mengenai efek samping KB terhadap tekanan darah serta cara pencegahan dan pengobatannya.

Kata Kunci : Alat Kontrasepsi, Akseptor KB, Depot Medroxy, Tekanan Darah

ABSTRACT

Contraceptive devices that are often the choice of EFA are injectable contraceptives. Injectable contraception is a long-term contraceptive method that works long (long) and is very effective, its use is very practical, the price is cheap, it is safe and does not require use every day or every time you have intercourse. The prevalence of hypertension based on doctor's diagnosis in Lampung Province in 2020 was 15.10%, with the highest incidence in Way Kanan District at 25.9% and the lowest in Tanggamus District at 10.0% while South Lampung District was 12.5%. The purpose of this study was to determine the relationship between the use of depo medroxyprogesterone acetate injectable contraception and the blood pressure of family planning acceptors in the working area of the Penengahan Health Center, South Lampung Regency.

This type of research is quantitative with a cross-sectional approach. The population in this study is mothers with 3 months injection family planning acceptors with a sample of 152 respondents with total sampling technique. Data collection by questionnaire and blood pressure measurement. Data analysis was univariate and bivariate (chi square).

The results showed that 120 respondents (78.9%), with the use of injectable contraceptives from Depo Medroxy Progesterone Acetate for 2-3 years, and 126 (82.9%). There is a relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in

the work area of the Penengahan Health Center, South Lampung Regency with a value ($p\text{-value} = 0.036 < 0.05$). Suggestions to the Puskesmas to be able to provide education to new and old family planning acceptors regarding the side effects of family planning on blood pressure and how to prevent and treat it.

Keywords: Blood Pressure, Contraceptive devices, family planning acceptors, Medroxy Depot

INTRODUCTION

According to the World Health Organization (WHO), family planning is an action that helps individuals or married couples to get certain objectives, avoid unwanted births, regulate the interval between pregnancies, control the time of birth in a husband and wife relationship and determine the number of children in the family. (Hartanto, 2014).

According to the United Nations (2019) the use of contraceptives in the world as many as 842 million using modern contraceptive methods and 80 million using traditional methods, as many as 190 million women want to avoid pregnancy and do not use any contraceptive method. According to WHO, in 2017 there were more women with hypertension (30%) than men (29%). This is because the use of hormonal contraceptives is one of the risk factors for hypertension. In a study conducted by Barikani and Saeedi among 328 Iranian women over 30 years, the prevalence of hypertension was reported to be 32%, and 8.8% of those with hypertension were pill contraceptive acceptors for 9.8 ± 6.1 years (Afshari, 2021).

According to the BKKBN, active family planning participants among fertile age couples (PUS) in 2020 amounted to 67.6%. This figure increased compared to 2019 of 63.31% based on data from the Indonesian Family Profile, 2019. In 2020, Bengkulu Province family planning participation had the highest percentage of 71.3%, while Papua Province had the lowest family planning participation rate of 24.9%, for Lampung Province 68.7% (Ministry of Health, 2021). Based on riskesdas data, hypertension sufferers in Indonesia are 17.64%, of which 11.57% are female (Riskesdas, 2018) Several studies in Indonesia have found that there is an effect of using hormonal contraception on increasing blood pressure (Nurhidayati, 2020).

The coverage of active family planning participants in Lampung Province in 2020 was 72.4%, the highest was in Pesawaran Regency at 99.5% and the lowest was in Pesisir Barat Regency at 46.9% while South Lampung Regency was at 71.7% (Lampung Health Office, 2021). The prevalence of hypertension based on doctor's diagnosis in Lampung Province is 15.10%, with the highest incidence in Way Kanan Regency at 25.9%

and the lowest in Tanggamus Regency at 10.0% while South Lampung Regency is 12.5%, while by gender, 16.99% of hypertension sufferers are women (Riskesdas Lampung, 2018).

The coverage of active family planning participants in 2020 was 71.13% (123,306 active family planning participants), with the highest coverage at Bumidaya Health Center at 100% and the lowest at Katibung Health Center at 15.7% while at Penengahan Health Center at 54.0%. The prevalence of hypertension sufferers in South Lampung Regency is 91,522 people, with the highest sufferer at Karang Anyar Health Center at 8,278 and the lowest at Talang Jawa Inpatient Health Center at 1,288 while the Penengahan Health Center was 3423 cases (South Lampung Health Office, 2020).

Based on the initial data obtained at the Puskesmas Mediation, the number of family planning acceptors from January to December 2021 was 866 acceptors. The most commonly used contraceptive methods were 419 acceptors 3 months injection, 323 1 month injections, 83 pills acceptors, 29 acceptors Implant, and 12 IUD acceptors. The data shows an increase in blood pressure at the 3-month injection, there are 61 mothers with an increase in blood pressure for 1 year. Mediation, 2020).

Healthy behavior is an activity that hormonal family planning acceptors need to do as an effort to maintain and improve health, namely by eating a balanced menu, namely a daily diet that meets nutritional needs that meet the body's needs both in quantity and quality (Notoatmodjo, 2014).

In addition, understanding and knowledge of hormonal contraception methods need to be given to hormonal family planning acceptors, so that after getting sufficient knowledge about hormonal contraception, it is hoped that hormonal family planning acceptors can have a policy in choosing a contraceptive method that suits their circumstances. Efforts that midwives can do to deal with the side effects of hypertension in acceptors are by providing KIE (Education Information Communication) which includes explaining the cause of the occurrence and explaining that the symptoms or complaints are in the context of temporary and individual adjustment, motivating them to continue using hormonal contraception and furthermore. take medical action according to the side effects experienced

(Nurhidayati, 2020).

The results of the preliminary study showed that there were 152 mothers who received a 3-month injection of family planning injection with a duration of 1-3 years at the mediation health center. Based on the results of a survey conducted on March 3-5, 2022 to 20 family planning acceptors, 16 people used injectable contraception and 4 people used pill contraception. In users of PIL contraception, 1 (25%) acceptors complained of frequent headaches. Of the 16 injectable family planning acceptors, 5 (31.2%) people said they experienced an increase in weight of 1-2 kg while using injectable family planning while 8 (50%) said they often complained of headaches and it was seen on the acceptor card that the mother's blood pressure had increased.

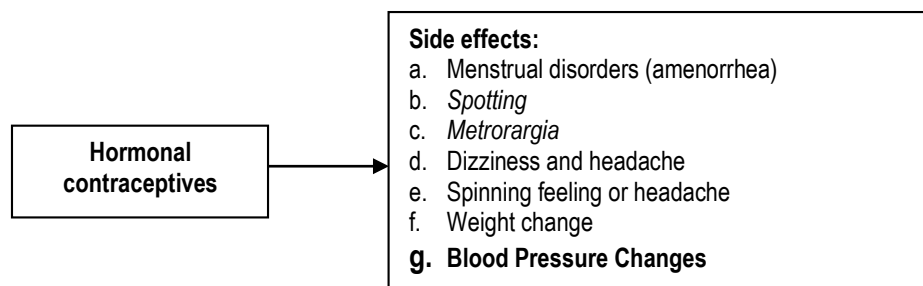
So the researcher is interested in conducting a study with the title "The Relationship between the Use of Depo Medroxy Progesterone Acetate Injectable Contraceptives and the Blood Pressure of Family Planning Acceptors in the Work Area of the Penengahan Health Center, South Lampung

Regency".

METHOD

This type of research is a type of quantitative research. Quantitative research method is a research method based on the philosophy of positivism which is used to examine certain populations or samples, collecting data using research instruments. The analysis can be quantitative or / statistical, with the aim of testing the established hypothesis (Sugiyono, 2017). The population in this study were mothers with 3 months injection KB acceptors within 1-3 years in the Work Area of the Penengahan Health Center, South Lampung Regency, as many as 152 participants. The sample size was taken using the sample size formula from the entire population, so the number of samples in this study was 152 respondents. After the number of samples is known, then random sampling *Total Sampling*. Sampling by Total Sampling is a sampling technique where the number of samples is the same as the population (Sugiyono, 2017)

Figure 1
Theoretical framework

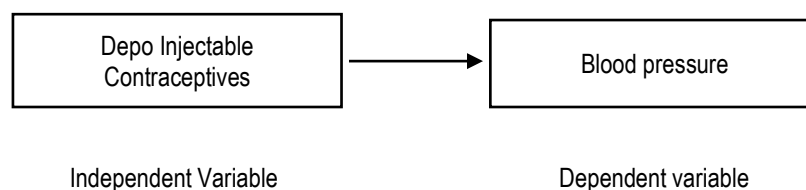


Source: Affandi (2012)

Conceptual framework is a description and visualization of the relationship or relationship between concepts or variables that will be observed

or measured through research to be carried out (Notoatmodjo, 2018).

Figure 2
Conceptual framework



RESULT

Characteristics of Respondents

Table 1

Characteristics of Respondents

Variable	Category	N	%
Age	> 35 years old	61	40.1
	20-35 years old	91	59.9
	D4	1	.7
Education	PT	4	2.6
	SD	52	34.2
	SENIOR HIGH SCHOOL	50	32.9
	JUNIOR HIGH SCHOOL	45	29.6
Work	IRT	144	94.7
	Working	8	5.3
	1	30	19.7
Parity	2	73	48.0
	3	33	21.7
	4	14	9.2
	5	2	1.3

Based on table 1, it is known that respondents aged 20-35 years as many as 91 (75.9%), respondents with elementary education as many as 52 (34.2%), respondents with household work as many as 144 (94.7%), and respondents with parity 2 as much as 73 (48.0%).

Univariate Analysis

Frequency distribution of injectable contraceptive use at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency

Table 2
Frequency distribution of injectable contraceptive use at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency

Variable	N	%
2-3 years	120	78.9
1 - < 2 years	32	21.1

Based on table 2, it is known that 120 respondents (78.9%), using injectable contraceptives Depo Medroxy Progesterone Acetate for 2-3 years, and 32 (21.1%).

Distribution of blood pressure frequency of injectable contraceptive acceptors at the Depo Medroxy

Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency in 2022

Table 3
Distribution of blood pressure frequency of injectable contraceptive acceptors at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency in 2022

Variable	N	%
Hypertension	26	17.1
Not	126	82.9

Based on table 3, it is known that respondents with high blood pressure (hypertension) acceptors of injectable contraception Depo Medroxy Progesterone Acetate as many as 26 (17.1%), and respondents with normal blood pressure (not hypertension) acceptors of injectable contraceptives Depo Medroxy Progesterone Acetate as many as 126 (82.9%).

Bivariate Analysis

The relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in the working area of the Penengahan Health Center, South Lampung Regency

Table 4
The relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in the working area of the Penengahan Health

Center, South Lampung Regency

Contraception	Blood pressure				N	%	p-value	OR 95% CI
	Hypertension		Not					
	n	%	n	%				
2-3 years	25	20.8	95	79.2	120	100.0	0.036	8,158 (1,061-62,706)
1 - < 2 years	1	3.1	31	96.9	32	100.0		

Based on table 4, it is known from 120 respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years as many as 25 (20.8%) had hypertension and as many as 95 (79.2%) did not have hypertension. Of the 32 respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 1- < 2 years 1 (3.1%) had hypertension and 31 (96.9%) had no hypertension.

The results of the statistical test showed p-value = 0.036, which means $p < \alpha$ (0.05), to the conclusion that there is a relationship between the use of injectable contraceptives at Depo Medroxy Progesterone Acetate and the blood pressure of family planning acceptors in the work area of the Penengahan Health Center, South Lampung Regency. With OR . value 8.1 means respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years have a chance 8.1 times greater to experience events hypertension when compared with respondents using Depo Medroxy Progesterone Acetate injection contraception 1- < 2 years.

DISCUSSION

Univariate Analysis

Frequency distribution of injectable contraceptive use at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency

Based on the results of the study, 120 (78.9%) respondents used injectable contraceptives with Depo Medroxy Progesterone Acetate for 2-3 years and 32 (21.1%).

In line with Norlita's research (2018), the majority of respondents using injection contraceptives at Harapan Raya Pekanbaru Health Center used 3-month injectable contraceptives as many as 24 respondents (75%). Nurhidayati's research (2020) The results of the study found that the duration of giving hormonal family planning was mostly 68 people (70.8%) in the old category (> 3 years).

Contraceptive devices that are often the choice of EFA are injectable contraceptives. Injectable contraception is a long-term contraceptive

method that works long (long) and is very effective, its use is very practical, the price is cheap, it is safe and does not require use every day or every time you have intercourse. However, injectable contraceptives also have many side effects such as changes in blood pressure, menstrual disorders, depression, increased vaginal discharge, acne, changes in libido, changes in body weight, dizziness, headaches and hematomas (Hutasoit, 2019).

Side effects of excessive levels of the hormone progesterone on the cardiovascular system can cause changes in blood pressure. The risk of an increase in blood pressure will increase with increasing age and duration of contraceptive use. Acceptors of Depo Medroxy Progesterone Acetate (DMPA) long term 3-5 have a risk of developing hypertension compared to acceptors who have not used contraception for a long time or 3 years. Long-term use without interruption causes constriction and blockage of blood by fat which will spur the heart to pump blood more strongly in order to supply blood to the tissues, which will result in an increase in blood pressure (Wahyuningsih, 2016).

According to the researcher, based on the results of the study, it was found that the use of family planning (DMPA) is a housewife where housewives also have the same rights as other couples of childbearing age to choose good and suitable contraceptives to use. In addition, most DMPA family planning users have basic education, mothers choose contraceptives that are easily available and widely used in the community. Contraception is part of reproductive health services to regulate pregnancy, and is the right of every individual as a sexual being.

According to the researchers, mothers who chose DMPA were more with the age of use > 2 years. DMPA contraception is mostly used by mothers after giving birth which does not reduce milk production and is easy to obtain and the injection time is not too close, which is once every 3 months. There are still many factors that influence mothers to use DMPA including the economy, the distance of health services that are close and easy, husband's support, the role of health workers and the environment.

According to researchers, mothers can use

DMPA KB if they have no complaints while using it, if they have side effects that can interfere with activities such as continuous dizziness or long menstruation, disturbing spots when worshipping, very drastic weight gain, you can consult a health worker with your husband. to find a solution in changing the next contraceptive method.

Distribution of blood pressure frequency of injectable contraceptive acceptors at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency in 2022

Based on the results of the study, it is known that respondents with high blood pressure (hypertension) acceptors of Depo Medroxy Progesterone Acetate injectable contraception as many as 26 (17.1%), and respondents with normal blood pressure (not hypertension) acceptors of Depo Medroxy Progesterone Acetate injectable contraception as many as 126 (82.9%).

In line with Nurhidayati's research (2020) The results of the study found that the incidence of hypertension in most respondents, namely 52 people (54.2%) had hypertension. Norlita's research (2018) found normal blood pressure for 25 respondents, hypertension for 7 respondents

Blood pressure is the force or push of blood against artery walls when blood is pumped out of the heart throughout the body.

The impact or consequences of hypertension can cause severe disease and complications, including stroke, myocardial infarction, kidney failure, and heart failure. Myocardial infarction that occurs in the coronary arteries can cause changes in the time of electrical conduction across the ventricles, resulting in dysrhythmias, cardiac hypoxia, and an increased risk of clot formation (Saputro, 2020).

According to researchers from the results of the study, 17% of respondents with high blood pressure or hypertension, this increase in blood pressure is due to many factors including the use of DMPA family planning, genetics, lifestyle, smoking habits, consuming too much salty food, consuming too much sweet food, and lack of physical activity.

According to researchers, blood pressure in Kb DMPA users is caused by: Women who have not experienced menopause have hormone regulation that is still quite good and the hormone estrogen plays a role in increasing HDL levels. High HDL levels become a protective factor that prevents the process of atherosclerosis and protects against the risk of hypertension. Women will lose little by little the hormone estrogen which protects blood vessels from damage. Decreased estrogen will cause LDL to

increase and HDL to decrease so that plaque buildup in blood vessels will be easier to occur. Women of childbearing age should be more careful in choosing contraceptives so as not to endanger the health of the mother. If the mother feels that there are disturbing side effects of family planning, she is expected to be able to carry out an examination and consult the nearest health service.

Bivariate Analysis

The relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in the working area of the Penengahan Health Center, South Lampung Regency

Based on the results From the statistical test, it was found that $p\text{-value} = 0.036$, which means $p < \alpha$ (0.05), until it was concluded that there was a relationship between the use of injectable contraception at Depo Medroxy Progesterone Acetate and the blood pressure of family planning acceptors in the work area of the Penengahan Health Center, South Lampung Regency. With OR value 8.1 means respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years have a chance 8.1 times greater to experience events hypertension when compared with respondents using Depo Medroxy Progesterone Acetate injection contraception 1- < 2 years

Princess Research (2022) The results showed that there was a relationship between the use of 3-month injections and weight gain with $P(\text{sig}) = 0.000$ (< 0.05) or $r = 0.775$ ($r < 1$). Nurhidayati's research (2020) shows that there is a long-term relationship between giving hormonal family planning to the incidence of hypertension at BPM Nurhidayati, Kedungadem District, Bojonegoro Regency.

Contraceptive devices that are often the choice of EFA are injectable contraceptives. Injectable contraception is a long-term contraceptive method that works long (long) and is very effective, its use is very practical, the price is cheap, it is safe and does not require use every day or every time you have intercourse. However, injectable contraceptives also have many side effects such as changes in blood pressure, menstrual disorders, depression, increased vaginal discharge, acne, changes in libido, changes in body weight, dizziness, headaches and hematomas (Hutasoit, 2019).

Side effects of excessive levels of the hormone progesterone on the cardiovascular system can cause changes in blood pressure. The risk of an increase in blood pressure will increase with increasing age and duration of contraceptive use. Acceptors of Depo Medroxi Progesterone Acetate

(DMPA) long term 3-5 have a risk of developing hypertension compared to acceptors who have not used contraception for a long time or 3 years. Long-term use without interruption causes constriction and blockage of blood by fat which will spur the heart to pump blood more strongly in order to supply blood to the tissues, which will result in an increase in blood pressure (Wahyuningsih, 2016).

The impact or consequences of hypertension can cause severe disease and complications, including stroke, myocardial infarction, kidney failure, and heart failure. Myocardial infarction that occurs in the coronary arteries can cause changes in the time of electrical conduction across the ventricles, resulting in dysrhythmias, cardiac hypoxia, and an increased risk of clot formation (Saputro, 2020).

Healthy behavior is an activity that hormonal family planning acceptors need to do as an effort to maintain and improve health, namely by eating a balanced menu, namely a daily diet that meets nutritional needs that meet the body's needs both in quantity and quality (Notoatmodjo, 2014).

Medroxy Progesterone Acetate Depot(DMPA) used for a long time can suppress estrogen levels in women. Estrogen has an important role in fat metabolism through estrogen receptor (ER α) in skeletal muscle and increasing the activity of PPAR (Peroxisome proliferation activator receptors). PPAR is a hormone receptor that can stimulate the expression of protein genes and enzymes that enhance transport and oxidation of LCFA (long chain fatty acids) or long chain fatty acids (Nurmainah, 2020).

In long-term DMPA acceptors 3-5 years without interruption can result in constriction and blockage of blood by fat, which will spur the heart to pump blood more strongly in order to supply blood needs to the tissues, which will result in an increase in blood pressure (Uswatun, 2016).

Based on the results of the study, it was found that of 120 respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years as many as 25 (20.8%) had hypertension. Of the 32 respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 1- < 2 years 1 (3.1%) had hypertension. The results indicated that mothers who used DMPA for a longer period of time had a higher risk of developing high blood pressure or hypertension. There are mothers who use DMPA contraception but there is no high blood pressure this is because not all women have the same hormone levels, besides that there are many triggers for increasing blood pressure itself besides the use of DMPA KB.

According to user researchers Medroxy

Progesterone Depot Acetate poses a risk of an increase in blood pressure because women who have not experienced menopause have hormone regulation that is still quite good and the hormone estrogen plays a role in increasing HDL levels. High HDL levels become a protective factor that prevents the process of atherosclerosis and protects against the risk of hypertension. Women will lose little by little the hormone estrogen which protects blood vessels from damage. Decreased estrogen will cause LDL to increase and HDL to decrease so that plaque buildup in blood vessels will be easier to occur.

According to field researchers, it was found that an increase in blood pressure is a complaint experienced by some acceptors, although the percentage is not so large, but an increase in blood pressure (hypertension) gets special attention, because if it is not observed properly it will become hypertension with a higher level and have a negative effect. fatal. So couples of childbearing age must increase their knowledge about contraceptives so that they can decide to use the right contraceptive method and do not have side effects for the mother. EFA is expected to increase knowledge about the long-term side effects of using 3-month injectable contraceptives. In the use of hormonal contraception, at least a resting phase is carried out.

CONCLUSION

The results showed that There are 5 (five) distributions of the frequency of stunting risk factors, which are known to respondents with the use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years as many as 120 (78.9%), and respondents with the use of injectable contraceptives Depo Medroxy Progesterone Acetate 1- < 2 years as many as 32 (21.1%). It is known that respondents with blood pressure of Depo Medroxy Progesterone Acetate injection contraceptive acceptors are 26 (17.1%), and respondents with blood pressure of Depo Medroxy Progesterone Acetate injection contraceptive acceptors are 126 (82.9%). There is a relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in the working area of the Penengahan Health Center, South Lampung Regency (p-value = 0.036) and it is known that respondents who use Depo Medroxy Progesterone Acetate injectable contraception for 2-3 years have an 8.1 times greater chance of experiencing hypertension than respondents with Depo Medroxy Progesterone Acetate injectable contraceptives 1- < 2 years.

SUGGESTION

For Intermediate Health Center the results of this study can be used by Community Health Center as an evaluation to provide education to new and old family planning acceptors regarding the side effects of family planning on blood pressure in order to prevent and treat it as well as to improve women's health status, especially in the use of contraception.

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RELATIONSHIP OF NUTRITIONAL STATUS TO THE DEVELOPMENT OF TODDLERS

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ABSTRAK : HUBUNGAN STATUS GIZI DENGAN PERKEMBANGAN BALITA

Upaya pemantauan kesehatan sedini mungkin terhadap anak dilakukan sejak anak masih dalam kandungan sampai dia berusia 5 tahun, dengan tujuan agar anak mampu melangsungkan kehidupannya dengan baik sekaligus meningkatkan kualitas hidup guna mencapai tumbuh kembang yang optimal. Proporsi status gizi sangat pendek dan pendek pada balita di Indonesia yaitu 30,8%, demikian juga dengan proporsi status gizi buruk dan gizi kurang yaitu 17,7%. Untuk mengetahui hubungan status gizi dengan perkembangan balita di Posyandu Sukaraja Tiga.

Jenis penelitian ini merupakan jenis penelitian kuantitatif. Rancangan penelitian yaitu penelitian analitik observasional dengan pendekatan Cross Sectional. Populasi dalam penelitian ini 255 balita dan sampel sebanyak 156 responden balita dengan teknik pengambilan sample quota random sampling untuk posyandu di desa Sukaraja Tiga. Instrumen pengumpulan data adalah lembar KPSP, timbangan dan Infantometer. Analisa data menggunakan analisa univariat dan bivariate (chi-square).

Penelitian menunjukan p value sebesar 0,023 ($p < \alpha = 0,05$), yang berarti bahwa terdapat hubungan signifikan antara status gizi dan skor KPSP balita usia 1-5 tahun di posyandu desa Sukaraja Tiga. Hasil penelitian menunjukan bahwan dari 156 balita yang periksa KPSP, ada 56 balita (65,1%) mempunyai KPSP "sesuai", 15 (38,5%) balita dengan nilai "Meragukan", dan nilai KPSP "Penyimpangan" yaitu 17 (54,8%) balita dengan status gizi normal. Semakin baik gizi balita maka perkembangan balita pun semakin baik. Diharapkan orang tua lebih meningkatkan wawasan tentang gizi dan perkembangan anak sesuai usianya.

Kata Kunci : Balita, Perkembangan, Status Gizi, Wasting

ABSTRACT

Background : Efforts to monitor the health of children as early as possible are carried out from the time the child is still in the womb until he is 5 years old, with the aim that the child is able to live a good life while at the same time improving the quality of life in order to achieve optimal growth and development. The proportion of very stunted and short nutritional status in toddlers in Indonesia is 30.8%, so is the proportion of poor nutritional status and undernutrition which is 17.7%. Objective: To determine the relationship between nutritional status and toddler development at Posyandu Sukaraja Tiga

Methods : This research is a quantitative research. The research design is observational analytic research with a cross sectional approach. The population in this study were 255 toddlers and a sample of 156 respondents. sampling technique with quota random sampling. Data collection instruments are KPSP sheet, scales and Infantometer. Data analysis used univariate and bivariate (chi-square) analysis.

The research results showed a p value of 0.023 ($p < \alpha = 0.05$), which means that there is a significant relationship between nutritional status and KPSP scores of toddlers aged 1-5 years. The research results showed that out of 88 toddlers with normal nutritional status, 56 toddlers (65.1%) had "appropriate" KPSP, 15 (38.5%) toddlers with a "Doubtful" value, and 17 (54.8%) toddlers with "Directations". The better the nutrition of toddlers, the better the development of toddlers. It is expected that parents will increase their knowledge about nutrition and child development according to their age..

Keywords : Growth, Nutritional Status, Toddler, wasting

INTRODUCTION

Efforts to monitor the health of children as early as possible are carried out since the child is still in the womb until he is 5 years old, with the aim that the child is able to live a good life while at the same time improving the quality of life in order to achieve optimal growth and development.. (Potto, A. U, 2021).

Based on data from UNICEF 2017, around 22.7% of toddler in the world experience growth disorders (Sulistiyawati, dkk, 2022). While the developmental stages of toddlers today determine the future of the nation. General developmental delay is a state of significant developmental delay in two or more developmental domains. Child development consists of gross motor, fine motor, language/speech, and personal social/independence. The incidence of generalized developmental delay is estimated to be around 1-3% of toddlers. Nutritional problems that are a factor in toddler development problems such as unbalanced nutrition and infectious diseases which will have an impact on decreasing the health of toddlers so that nutritional status is not normal in toddlers (Dewi, 2010).

Nutrition that has poor quality and quantity will cause nutritional problems such as undernutrition, very thin nutrition, fat nutrition, and obesity so that abnormal nutritional status will have an impact on the structure and function of the brain so that brain cells will be reduced which can cause developmental problems in toddler (Fauzi, Y. A., 2019).

Wasting is a nutritional problem that is acute in nature, as a result of events that occur in a short time such as a lack of food intake. According to the Ministry of Health, wasting is characterized by a lack of weight according to the child's length/height (BB/TB). (Miko, dkk, 2017)

Delayed development also results in the function and structure of the brain, development in toddlers is influenced by many factors, one of which is nutrition consumed every day, which does not contain enough nutrients for the body of toddlers which has an impact on the development of toddlers (Gunawan, Fadlyana, & Rusmil, 2017).

The prevalence of malnutrition under five in Lampung province is 17%. Malnutrition status in toddlers is a condition that is always found in the community, therefore the percentage of malnutrition needs to be kept down so it does not exceed 5%. The Ministry of Health of the Republic of Indonesia, (2020) states that the target coverage for toddlers whose weight (D/S) is 75% in 2022. This is an effort to reduce the morbidity and mortality of children under five by carrying out health maintenance. The

prevalence of malnutrition in toddlers in Lampung Province is still quite high. The problem of malnutrition is closely related to several aspects, such as: food availability; knowledge that impacts dietary behavior and socioeconomic factors. Poor nutritional status will also have an impact on the child's growth rate, both physically and psychologically, including the level of intelligence. The health coverage of toddlers in East Lampung district in 2013 (72%) has increased compared to last year (62.4%) but has not yet reached the SPM target (80%) (East Lampung Health Office, 2013). The results of the pre-survey of 10 toddlers 1-5 years found that there were 4 toddlers with undernourished status, and as many as 3 people experiencing developmental delays, namely not being able to compose sentences at the age of 2 years, drawing to follow the lines. Based on this background, researchers aim to conduct research on the relationship between nutritional status and toddler development.

RESEARCH METHODS

This type of research is quantitative research. The research design is observational analytic research with a cross sectional approach. The population of this study were all toddlers in the Sukaraja Tiga Village Posyandu with a total of 255 toddlers. Inclusion Criteria: Toddlers aged 12-60 months which are toddler data in the period January-February 2022. The sampling technique used the quota random sampling technique, a sample of 156 was obtained. The research instrument used the KPSP questionnaire and data analysis used the Pearson Chi Square test.

RESEARCH RESULT

Table 1
Frequency Distribution of Mother's Education and Occupation at Posyandu, Sukaraja Tiga Village, East Lampung Regency in 2022

Carateristics	Frekuensi	Percentase
Pendidikan Ibu Rendah	67	43
Pendidikan Tinggi	89	57
Pekerjaan Ibu Tidak Bekerja	129	82.7
Bekerja	27	17.3

Based on Table 1, it is known that 67 (43%) of mothers have low education, 89 (57%) of mothers have higher education. 27 (17.3%) Mothers worked and most of 129 (82.7%) Mothers did not work.

Table 2
Frequency Distribution of Nutrition Status at
Posyandu in Sukaraja Tiga Village, East
Lampung Regency in 2022.

Status Gizi (Wasting)	Frekuensi	Percentase
Normal	88	56.4
Tidak Normal	68	43.6

Based on Table 2, it is known that at the Posyandu in Sukaraja Tiga Village, East Lampung Regency in 2022, the majority of respondents had normal nutritional status, totaling 88 respondents (56.4%) and 68 respondents (43.6%) with abnormal nutritional status.

Table 3
Distribution of Development Frequency at
Posyandu in Sukaraja Tiga Village, East
Lampung Regency in 2022

Growing Kids	Frekuensi	Percentase
Sesuai	86	54.8
Meragukan	39	25.2
Penyimpangan	31	20

Based on Table 3 it is known that in the Posyandu of Sukaraja Tiga Village, East Lampung Regency in 2022, the KPSP score of respondents who were "appropriate" was 86 respondents (56.8%), "Doubtful" was 39 respondents (25.2%) and "Deviance" was 31 respondents (20%).

Tabel 4
Hubungan Antara Status Gizi (wasting) dengan perkembangan Balita Di Posyandu Desa Sukaraja Tiga
Kabupaten Lampung Timur Tahun 2022

Status Gizi	Perkembangan Anak						Total		P-Value
	Sesuai		Meragukan		Penyimpangan				
	N	%	N	%	N	%	N	%	
Normal	56	65.1	15	38.5	17	54.8	88	56.4	0.020
Tidak Normal	30	34.9	24	61.5	14	45.2	68	43.6	

Based on Table 4, it is known that in the Posyandu of Sukaraja Tiga Village, East Lampung Regency in 2022, out of 156 respondents there were 88 toddlers with normal nutritional status and of them 56 toddlers (65.1%) had the appropriate KPSP score, 15 (38.5%) toddlers with a "Doubtful" value, and the KPSP value "Deviance" is 17 (54.8%). There were 68 respondents with abnormal nutritional status and among them there were 30 (34.9%) respondents who had a KPSP score of "According", 24 (61.5%) respondents with a value of 53 "Doubtful" and 14 (45.2%) respondents with the "Deviation" value. Based on the results of statistical tests, a p-value of 0.023 or a p-value of <0.05 was obtained, which means that there is a relationship between nutritional status (wasting) and toddlers at Posyandu, Sukaraja Tiga Village, East Lampung Regency in 2022.

DISCUSSION

Research data shows that the nutritional status of toddlers in Posyandu Sukaraja Tiga Village is mostly good. Following the following categories, nutritional status in the normal category is a z-score value of -2SD to +1SD, malnutrition is a z-score value less than -2SD but more than -3SD, malnutrition is a z-score value less than -3SD and overnutrition is a z-score value of more than 2SD.

This research is in line with Gunawan's research (2016). Research with the title Relationship between nutritional status and development of children aged 1-2 years showed that most of the respondents had normal nutritional status (89.9%). And only (10.1%) with thin nutritional status.

Basically, the need for 54 calories for humans varies according to age, gender, activity, weight, height, and others. Toddlers 1-5 years can be divided into 2 namely, children aged over 1-3 years known as "batita" and children aged more than 3-5 years known as "preschool" age. Children under 5 years are a group that shows rapid body growth, but this group is the most common group that suffers from malnutrition (Supartini, 2014).

According to research by Fauzi et al (2019) gender, age, weight, mother's occupation, order of children. The nutritional adequacy rate between men and women is different, the difference lies in the children's activities every day, boys play more often which is more tiring than girls. Differences in the metabolism of boys and girls which are also related to children's daily activities.

Based on Table 3, it is known that at the Posyandu in Sukaraja Tiga Village, East Lampung Regency in 2022, KPSP scores of 55 respondents who "appropriate" totaled 86 respondents (56.8%),

"Doubtful" of 39 respondents (25.2%) and "deviations" amounted to 31 respondents (20%).

This research is in line with Gunawan's research (2016) where the results showed 90.25% of respondents had development according to their age and only 9.75% had doubtful development. Development will also experience progressive changes, impacting the process of maturity and individual experience, each individual in the journey of life will go through the first two processes, namely, growth, growth here leads to infancy, the second setback, setbacks will occur when the individual has stepped on late adulthood (Soetjiningsih, 2012).

This aspect of development is qualitative in nature, namely the increased maturity of the functions of each part of the body, which begins with the heart being able to beat to pump blood, the ability to breathe until the child has the ability to lie on his stomach, sit, walk, talk, pick up objects around him, as well as the ability to be emotional and social child. The initial development stage will determine the next development (Mutiara Solechah dkk., 2017).

Relationship between Toddler Nutritional Status and Toddler Development Based on Table 4 it is known that in the Posyandu of Sukaraja Tiga Village, East Lampung Regency in 2022, out of 156 56 toddlers who checked the KPSP, there were 55 toddlers (64.6%) who had KPSP "appropriate", 15 (38, 5%) of toddlers with a value of "Doubtful", and a KPSP value of "Deviation" namely 17 (54.8%) toddlers with normal nutritional status, while there are 31 infants (36.4%) have an KPSP value of "Compliant", 24 (61, 5%) "Doubtful" toddlers and 14 (45.2%) toddlers "deviations" in abnormal nutritional status. Based on the results of statistical tests, a p-value of 0.023 or a p-value of <0.05 was obtained, which means that there is a relationship between nutritional status and toddler development at Posyandu, Sukaraja Tiga Village, East Lampung Regency in 2022.

According to Call and Levinson, nutritional status is influenced by two factors, namely food consumption and health level, these two factors are direct causes, while indirect causes are the content of nutrients in foodstuffs, eating habits, whether there is a food purchasing program outside the family, health maintenance, family purchasing power, and physical and social environment (Supariasa, 2012).

Another study explained that the causative factors for the incidence of wasting toddler include suboptimal breastfeeding, poor economic status and mother's education, diarrhea and respiratory tract morbidity, sanitation channels and living in rural areas associated with an increased likelihood of wasting in toddler. (Derso, 2017)

Malnutrition in toddlers can cause impaired child intelligence, decreased child productivity and low cognitive abilities and cause disruption of child development so that it can cause developmental delays (Yulistiyaningsih, 2014)

Child growth and development greatly determines quality resources, development in children is influenced by the environment and parents. Parents who are the closest people to the child must understand about the growth and development of children, not only that to achieve quality development they must be supported with good nutrition, because in nutrition there is continuity between nutritional intake and the amount of nutrients needed by the child's body. fulfill the various functions of the child's body. (Husnah, 2015).

This research is different from research conducted by Gunawan (2017) where there is no relationship between nutritional status and child development with a P(value) of 0.394. This difference also exists in research subjects, where the research subjects are children aged 1-2 years. At the age of 1-2 years, most children still receive attention from their mothers regarding their food, and are still drinking breast milk so that development is included in the doubtful category, there has been no development in the deviation category. It seems that subjects at the age of 1-2 years are still under the supervision of their mothers and receive adequate developmental stimulation.

Research conducted by Mutiara Solechah et al, (2017), with good nutritional status allows respondents to have good development as well. This research is strengthened by research conducted by Nurhayati (2019) where there is a relationship between nutritional status and child development. However, in this study not all respondents who had normal nutritional status also had good or appropriate development. There are still some children with normal nutritional status who have doubtful and deviant development, on the other hand there are still children with abnormal nutritional status but who have good development. This can happen because of factors other than nutritional factors that can affect children's development such as education and mother's occupation. In this study there were still 42.9% of mothers with low education. Parental education influences children's development, especially mother's education. Low maternal education has a risk for child development delays, because mothers do not know how to stimulate their child's development. Mothers with higher education are more open to receiving information from outside about good parenting practices, health care and children's education. Meanwhile in maternal

employment, 82.7% of mothers work as housewives. Mother's occupation can be related to economic status, where economic status is one of the factors that can affect children's development, especially intelligence, perhaps due to family limitations in providing various play facilities so that children less stimulation. A comprehensive effort to maintain the development of children as early as possible from the womb to the age of five. Provision of stimulation is needed according to the age of the child. Increasing the participation of mothers to always get information about children's development, so that if there is a suspicion of a disturbance or delay, its development can be detected as early as possible. The need for further research on child development, especially when children are under 2 years old.

CONCLUSION

There is a relationship between nutritional status and toddler development at Posyandu Desa Sukaraja Tiga in 2022 with a p(value) of 0.023.

SUGGESTION

There are many factors that influence development, in this study the researchers looked at the nutritional status of children. However, the child's nutritional status is not the main factor, so a comprehensive effort is needed to maintain the growth and development of the child as early as possible from the time he is in the womb to the age of five. Provision of stimulation is needed according to the age of the child. Increasing the participation of mothers to always get information about child development, so that if there is a suspicion of a disturbance or delay as early as possible the development can be detected. The need for further research on child development, especially when children are under 2 years old.

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THE ANALYSIS OF FACTORS RELATED TO THE PREVALENCE OF CHRONIC ENERGY DEFICIENCY (CED) IN PREGNANT WOMEN

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ABSTRAK : ANALISIS FAKTOR-FAKTOR TERKAIT PREVALENSI KEKURANGAN ENERGI KRONIS (KEK) PADA IBU HAMIL

Latar Belakang: Angka kematian ibu Indonesia Tahun 2018 menunjukkan bahwa AKI adalah sebesar 305 kematian ibu per 100.000 kelahiran hidup. Ibu meninggal akibat komplikasi yang terjadi dari buruknya status gizi ibu dan pada akhirnya berdampak kepada kondisi kesehatannya begitu juga dengan kondisi janin yang dilahirkan. Prevalensi KEK wanita hamil usia subur (15-49 tahun) di Indonesia adalah sebesar 17.3%.

Tujuan Penelitian: Untuk melakukan review pada beberapa literature terkait faktor-faktor yang berhubungan dengan Kejadian Kekurangan Energi Kronik (KEK) pada Ibu Hamil.

Metode Penelitian: Penelitian ini menggunakan metode literature review. Artikel dikumpulkan dengan melakukan penelusuran/ pencarian jurnal menggunakan Google Search atau bibliografi dari artikel yang ditelusur dan google *scholarly*. Literature review ini menggunakan literature terbitan tahun 2016-2019 yang dapat diakses fulltext dalam format pdf.

Hasil literature review: Hasil penelitian menunjukkan bahwa Ada hubungan yang signifikan antara umur, ada hubungan pendapatan keluarga, ada hubungan pengetahuan, ada hubungan pendidikan, dan ada hubungan paritas dengan kejadian KEK pada ibu hamil.

Kesimpulan dan Saran: Penelitian diatas menunjukkan adanya hubungan antara umur, pendapatan keluarga, pengetahuan, pendidikan, dan ada hubungan paritas dengan kejadian KEK pada ibu hamil.

Saran diharapkan kepada lahan penelitian, penelitian ini dapat menjadi bahan masukan dalam mengambil kebijakan dalam mengatasi kejadian kekurangan energi kronik (KEK) pada ibu hamil.

Kata kunci: Ibu hamil KEK, Umur, Pendapatan Keluarga, Pengetahuan, Pendidikan, Paritas.

ABSTRACT

Background: Indonesia's maternal mortality rate in 2018 shows that the MMR is 305 maternal deaths per 100,000 live births. The high maternal mortality rate is due to complications that occur from the poor nutritional status of the woman and ultimately impact her health condition as well as the condition of the fetus being born. The prevalence of pregnant women with CED of childbearing age (15-49 years) in Indonesia is 17.3%.

Objectives: To review some literature related to factors associated with the prevalence of Chronic Energy Deficiency (CED) in Pregnant Women.

Research Methods: This study uses the literature review method. Articles are collected by conducting a journal search using Google Search or a bibliography of the articles searched with Google Scholar. This literature review uses literature published in 2016-2019, which can be accessed in full-text in pdf format.

Results: The results of the study show that there is a significant relationship between age, family income, knowledge, education, and parity with the incidence of CED in pregnant women.

Conclusions: The above research shows a relationship between age, family income, knowledge, and education, and there is a relationship between parity and the incidence of CED in pregnant women.

Suggestion The research field is expected to be used as input for policymaking in overcoming the incidence of chronic energy deficiency (CED) in pregnant women.

Keywords: Chronic Energy Deficiency (CED); Pregnant women; Factors related to CED

INTRODUCTION

Chronic Energy Deficiency (CED) in pregnancy can cause complications for the mother

and fetus, including anaemia and bleeding. In labour, there is a risk of experiencing difficult and prolonged labour, premature birth, bleeding after childbirth and

death. While the impact on the fetus can cause miscarriage, abortion, birth defects and low birth weight of the fetus.¹ These complications are a factor in the Maternal Mortality Rate (AKI), which is still very high. It is estimated that every day around 830 women die from complications of pregnancy or childbirth worldwide. In Indonesia, in 2018, it is estimated that around 305,000 mothers died after pregnancy and childbirth. Where 75 % of all causes of maternal death one of which is bleeding.² Complications from poor nutritional status have an impact on the mother and fetus being born.³

The prevalence of CED (15-49 years) of pregnant women of childbearing age in Indonesia reaches 17.3%.⁴ KEK can be caused due to insufficient food and energy sources containing micronutrients along with the increasing needs of pregnant women, especially in the third trimester of pregnancy.⁵ This is caused by various factors, including the age of the mother who is too young (<20 years) or the age of the mother at high risk of giving birth (>35 years), low level of education and knowledge, low socioeconomic level, high maternal parity, the strenuous activity of the mother, health status of the mother which affects her appetite, pregnant women who experience infectious diseases, pregnancies that are too close together so that the mother has not had the opportunity to improve her body after giving birth.¹

Unbalanced intake during pregnancy causes various impacts, namely the risk of birth defects, low birth weight (LBW), anaemia, bleeding and maternal

death.⁶ By conducting an Antenatal Examination (ANC), it is hoped that the incidence of CED in pregnant women can be prevented.⁷ Midwives have a central role in preventing KEK in pregnant women while carrying out their role in providing maternal and child health services.⁸ Based on the background described above, the researcher is interested in conducting a literature review on "Analysis of factors related to the incidence of Chronic Energy Deficiency (CED) in pregnant women."

METHOD

This type of research uses the Literature Review method, which uses an *electronic* database. Articles were collected by searching/searching journals using Google Search or a bibliography of the articles searched and Google Scholar. Only articles containing full text will be included in this review.

This literature study uses the method of collecting data from computerized database systematic search studies (PubMed, BMC, Cochrane review, Google Scholar) in the form of research journals and review articles in the last six years with the keywords pregnant women's nutrition and prenatal nutrition. The process of this literature study goes through an initial process. Problem formulation, article search, data evaluation, as well as analyzing and interpreting.

The literature review search scheme can be seen in the following figure:

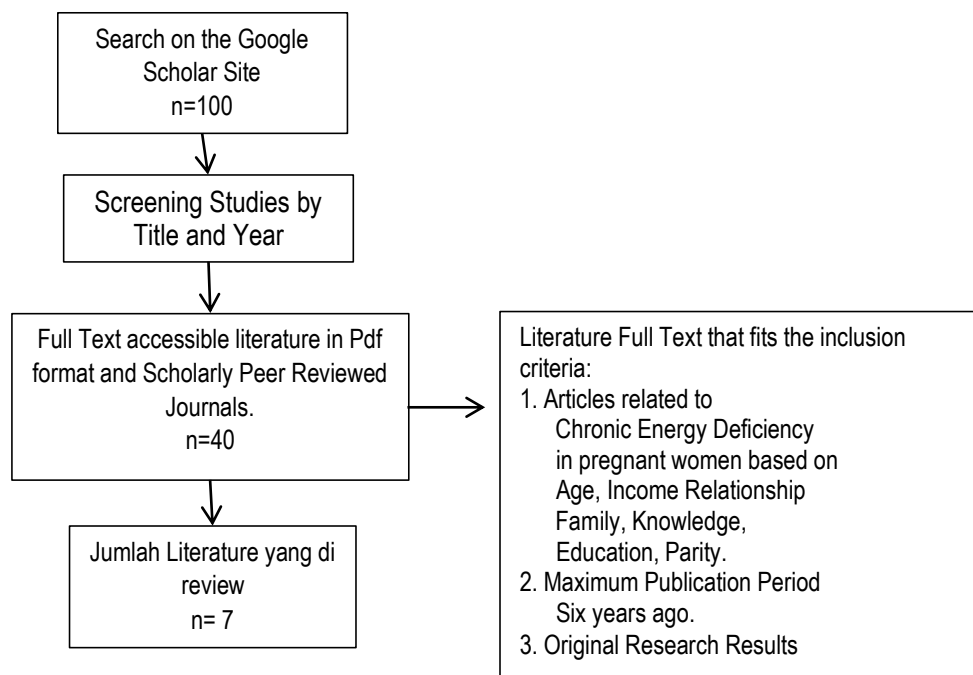


Figure 1. Literature Search Flow

RESULTS

A literature review was conducted on seven articles that were very relevant to the topic of this study, as presented in table 1.

Table 1
Literature reviewed

Researcher	Title	Year	Design/ Sampling Technique	Population and Sample	Results
Laila Rahmi	Factors related to Chronic Energy Deficiency (KEK) in pregnant women at the Belimbing Padang Health Center	2016	This type of research is analytic with a <i>cross-sectional design</i> using a <i>consecutive sampling technique</i> .	The population is all pregnant women, totalling 1,308 people, with a sample of 42 people.	The results show that the value of $p = 0.032$ ($p < 0.05$), there is a relationship between family income and KEK in pregnant women, the value of $p = 0.024$ ($p < 0.05$), there is a relationship between age and KEK in pregnant women, the value of $p = 0.044$ ($p < 0.05$) there is a relationship between parity and CED in pregnant women, the value of $p = 0.044$ ($p < 0.05$) there is a relationship between pregnancy spacing and CED in pregnant women.
Nursari Abdul Syukur	Factors that cause Chronic Energy Deficiency (KEK) in pregnant women at the Sidomulyo Health Center, Samarinda city	2016	This research is a descriptive study; the sample was taken by <i>total sampling</i> .	The population is all pregnant women, with a total sample of 88 people.	1) Characteristics: Age Most respondents are aged <20 years or 53 respondents (60.23%), most education is Elementary School or 40 respondents (45.46%), the most income is less or 55 respondents (62.5%), the highest parity is > 2 children or 44 respondents (50%). 2) The cause of Chronic Energy Deficiency (KEK) in Pregnant Women is economic factors or 28 respondents (31.82 %).
Indriati Fitrianingtyas, et al	Factors associated with Chronic Energy Deficiency (KEK) in pregnant women at Warung Jambu Community Health Center, Bogor City	2018	<i>cross-sectional</i> research design using a quantitative approach, using a <i>random sampling technique</i> .	The population in this study were all pregnant women totalling 1370 pregnant women. The sample in this study was 43 respondents.	The results showed that there was a relationship between knowledge about nutrition (p -value = 0.004) $RR = 2.222$, there was a relationship between infectious diseases (p -value = 0.000) $RR = 0.227$, there was a relationship between ANC pregnancy checks (p -value = 0.000) $RR = 2.700$ and the incidence of CED in pregnant women.

Febriyeni	Factors associated with Chronic Energy Deficiency in pregnant women	2017	Analytical descriptive research method with <i>cross-sectional approach</i> , taking <i>total sampling</i> .	The population is all pregnant women, with a total sample of 55 people	The results showed that there was a correlation between knowledge $p = 0.001$ ($p < 0.05$), there was an economic relationship $p = 0.005$ ($p < 0.05$), and there was a relationship between diet $p = 0.001$ ($p < 0.05$) with the incidence of CED in pregnant mother.
Musni, et al	Factors related to Chronic Energy Deficiency (KEK) in pregnant women at the UPTD Ajangale Health Center	2017	The method in this study is an analytic survey method with a <i>cross-sectional survey approach</i> , Technique sampling used is <i>purposive sampling</i> .	The population is all pregnant women, with a total sample of 64 people.	The results showed that there was a relationship between education (p -value = 0.025) and work (p -value = 0.047) with KEK in pregnant women, there was no relationship between the mother's age (p -value = 0.059) and parity (p -value = 0.383) with KEK in pregnant mother.
Rachmawati, et al	Multilevel Analysis on Factors Associated with Occurrence Chronic Energy Deficiency among Pregnant Women	2019	This study used a <i>case-control</i> design, cluster sampling	The population is all pregnant women, with a total sample of 200 people	The research results show that there is a relationship between food intake (p -value = 0.006), level of education (p -value = 0.030), occupation (p -value = 0.006), knowledge (p -value = -0.020), family income (p -value = 0.017), age (p -value = 0.030), parity (p -value = 0.010), utilization of ANC services (p -value = 0.007).
Naomi Edowai, et al	Factors Influencing With Malnutrition Pregnant at Tigi District Deiyai Regency	2018	Observational analytic research method with a <i>cross-sectional study design</i> , random sampling	The population is all pregnant women totalling 291 people, and a sample of 168 people.	The results showed that there was a relationship between education (p -value = 0.019), there was a relationship with work (p -value = 0.000), there was a relationship with knowledge (p -value = 0.000), and there was a relationship with eating frequency (p -value = 0.000). There is no relationship between age (p -value = 0.261), there is no relationship with family income (p -value = 0.254), there is no relationship with parity (p -value = 0.310), there is no relationship between birth spacing (p -value = 0.585) with the incidence KEK.

DISCUSSION

KEK occurs from a lack of intake of nutrients that takes place, causing a decrease in tissue.⁶ Based on the analysis of the journals from 7 articles/journals that specifically examined age, two journals were found that said age was related to the incidence of CED in pregnant women. Nutritional needs and age <20 years have not been able to meet their nutrition, especially to meet the nutrition of the fetus, while mothers aged >35 years will experience a high risk of pregnancy.⁴

Research by Rahmi (2016) and Syukur (2016) shows a relationship between family income and KEK in pregnant women. Income is the factor that most determines the quantity and quality of food dishes. Economic limitations cause the inability to buy good quality food, so the fulfilment of nutrition will be disrupted.¹ Income, social status and education can be affected by work. In addition, work can also measure the conditions in which a person works, which can affect his health condition.²⁷

The effect of knowledge and level of education on found in 4 journals that have been analyzed. The level of education is related to the mother's nutritional knowledge and the mother's knowledge in caring for her pregnancy. This nutritional knowledge will influence decision-making regarding access to food and will also affect behaviour when distributing food in the family and how to process food ingredients.²⁸

Research results of Rachmawati et al (2019), Rahmi (2016) and Syukur (2016) show that there is a significant relationship between parity and the incidence of CED in pregnant women. The high number of parity also illustrates the rate of repeated pregnancies, so it has many risks. It can be said that physically a high number of parity reduces the uterus's ability as a medium for fetal growth. Damage to the blood vessels of the uterine wall affects the circulation of nutrients to the fetus, where the number of nutrients will be reduced compared to subsequent pregnancies.²⁷ This shows that these studies show significant results regarding the factors associated with the incidence of chronic energy deficiency in pregnant women.

Conclusion

Based on the results of a literature review of 7 articles on the analysis of factors related to the incidence of Chronic Energy Deficiency (CED) in pregnant women, it was found that age, income, knowledge, education and parity were associated with the incidence of chronic energy deficiency in pregnancy. Expected

Suggestion

We hope to carry out further research on the factors that directly impact the incidence of chronic energy deficiency in pregnant women.

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THE EFFECT OF COUNTER PRESSURE ON THE SCALE OF LABOR PAIN IN ACTIVE PHASE I IN

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ABSTRAK : PENGARUH COUNTER PRESSURE TERHADAP SKALA NYERI PERSALINAN KALA I FASE AKTIF

Latar Belakang: Nyeri persalinan merupakan suatu kondisi yang fisiologis. Nyeri yang terjadi dapat mempengaruhi kondisi ibu berupa kelelahan, rasa takut, khawatir dan menimbulkan stres. *Massage counter pressure* adalah pijatan yang dilakukan dengan memberikan tekanan yang terus-menerus selama kontraksi pada tulang sakrum pasien dengan pangkal atau kepala salah satu telapak tangan.

Tujuan penelitian diketahui pengaruh counter pressure terhadap skala nyeri persalinan kala I fase Aktif di wilayah kerja Puskesmas Tanjungsari Natar Kabupaten Lampung Selatan tahun 2022..

Metode penelitian: Jenis penelitian kuantitatif dengan pendekatan *quasi eksperiment*. Populasi penelitian ini adalah seluruh ibu dalam proses persalinan kala I pembukaan 4-10 cm di wilayah kerja Puskesmas Tanjung Sari Natar Kabupaten Lampung Selatan sebanyak 52 ibu dengan sampel sampel sebanyak 30 orang menggunakan teknik *Acidental Sampling*. Penelitian telah dilaksanakan di wilayah kerja Puskesmas Tanjung Sari Natar Kabupaten Lampung Selatan pada bulan April - Juni tahun 2022. Pengumpulan data menggunakan lembar observasi. Analisa data secara univariat dan bivariat *uji t (uji wilcoxon)*.

Hasil penelitian: rata-rata nyeri persalinan terapi *counter pressure* adalah 7,0 dan sesudah diberikan *counter pressure* adalah 5,7. Ada pengaruh counter pressure terhadap skala nyeri persalinan kala I fase Aktif di wilayah kerja Puskesmas Tanjungsari Natar Kabupaten Lampung Selatan tahun 2022 dengan nilai p-value = 0,000. Saran : diharapkan bagi tenaga kesehatan untuk dapat mempertimbangkan metode *counter pressure* hangat sebagai salah satu cara untuk mengurangi nyeri persalinan pada ibu bersalin normal.

Kata Kunci : Nyeri, Persalinan, *Counter Pressure*

ABSTRACT

Background: Labor pain is a physiological condition. Pain that occurs can affect the mother's condition in the form of fatigue, fear, worry and cause stress. Counter pressure massage is a massage performed by applying continuous pressure during contraction of the patient's sacrum with the base or fist of one hand.

Purpose Knowing the effect of counter pressure on the labor pain scale of the active phase I in the working area of Tanjungsari Natar Health Center, South Lampung Regency in 2022.

Methods: This type of research is quantitative with a quasi-experimental approach. The population of this study were all mothers in the first stage of labor, opening 4-10 cm in the working area of the Tanjung Sari Natar Health Center, South Lampung Regency as many as 52 mothers with a sample of 30 people using the Acidental Sampling technique. The research has been carried out in the working area of Tanjung Sari Natar Health Center, South Lampung Regency in April - June 2022. Data collection uses observation sheets. Data analysis was univariate and bivariate t test (Wilcoxon test).

Results: of the study average labor pain counter pressure therapy was 7.0 and after being given counter pressure was 5.7. There is an effect of counter pressure on the labor pain scale of the Active Phase I in the working area of Tanjungsari Natar Health Center, South Lampung Regency in 2022 with a p-value = 0.000. Suggestion: it is expected for health workers to be able to consider the warm counter pressure method as a way to reduce labor pain in normal delivery mothers.

Keywords: Counter Pressure, Labor, Pain

INTRODUCTION

Labor and delivery are physiologically normal processes. The birth of a child is also a social occasion for which mothers and families have waited nine months (Diana, 2019). The final few hours of pregnancy are characterised by uterine contractions that thin the cervix, dilate it, and force the fetus into the birth canal. The active phase of labor is characterized by an increase in the frequency and duration of uterine contractions, as well as excruciating agony for the mother. At this moment, significant amounts of energy are expended. Myometrial contractions during labor are painful, hence this process is referred to as labor pain (Winkjosastro, 2016).

Labor pain that can affect the birthing process. The primary effect is due to the activation of the sympathetic nervous system, which increases plasma levels of catecholamines, particularly epinephrine, which can interfere with contractions (Rezeqi, 2020). Ineffective contractions might prolong labor. Pain also promotes uncoordinated uterine activity, resulting in prolonged labor, which might endanger the fetus and mother's lives (Mander, 2013).

Uncoordinated uterine contractions caused by moms who find it difficult to cope with the discomfort of labor might extend the initial stage and negatively affect the welfare of the fetus. One of the worrying, complex, and unanticipated issues of labor is no progress or slow progress. *Intrapartum infection, uterine rupture, pathological retraction rings, fistula formation, pelvic floor muscle injury, and head succedaneum, or molasses of the baby head*, are only a few of the major side effects of prolonged labor that could affect either the mother or the father (Winkjosastro, 2016).

According to the WHO, in 2020 there were 289 incidents of prolonged labor in women worldwide, or one in every 100,000 live births. This is one of the causes of maternal mortality worldwide. In contrast, mothers die from prolonged labor in Indonesia, where the rate is the highest in ASEAN (359 per 100,000 live births) (Oktafiani, 2021). According to Riskesdas 2018, the average complication of extended labor was 4.3%, with DI Yogyakarta having the greatest rate of prolonged labor at 7.9%, Papua Province having the lowest rate at 2.7%, and Lampung Province having the highest rate at 3.7%. (Ministry of Health), 2018).

Coverage of Maternal Health Services by District and Health Center in Lampung Province in 2019, with Central Lampung Regency having the largest number of births at 20,141, followed by Tulang Bawang Regency at 18,485, South Lampung

at 19,100, Bandar Lampung City at 18,237, and East Lampung at 17,975. (Profile Lampung Province, 2020).

Data on mothers giving birth in South Lampung Regency in 2020 showed that there were 21,310 mothers who gave birth, with the Tanjungsari Health Center having the highest number of mothers giving birth (977), followed by Sidomulyo Health Center with 677, Katibung Health Center with 421, and Banjar Agung Health Center with 322. The total number of pregnancies in 2021 was 23,102, with Tanjung Sari Health Center having the most pregnancies (1,112), Katibung having the second-highest number (811), and Sidomulyo having the third-highest number (629). (South Lampung Health Profile, 2021).

In 2021, the Katibung Health Center saw an increase in the number of mothers giving birth, with 811 mothers giving birth and 21 mothers giving birth (a rate of 2.6%) experiencing problems. In addition, there were no maternal deaths in Katibung Health Center in either 2020 or 2021. (South Lampung Health Profile, 2021).

In general, two and four wheeled vehicles can get to Tanjungsari Health Center, which is situated in Natar District, South Lampung Regency, with a total of 5 villages. Tanjungsari Health Center is a hospital for inpatients. Number of deliveries According to data gathered from Tanjungsari Health Center, 977 mothers gave birth in 2020, while 1112 did so in 2021. According to data from Tanjungsari Health Center, there were 640 normal deliveries in 2021, and up to 112 (17.5%) of them had problems. In 2020, 63 patients were referred (Puskesmas Tanjungsari, January 2022). Uncoordinated uterine contractions brought on by the agony the mother experiences after childbirth are one of these issues. The researchers performed research in the Tanjung Sari Health Center region due to the rise in the number of mothers giving birth there in the last two years and the higher number of problems compared to the Katibung Public Health Center.

The responsibility of health professionals in providing treatment to reduce issues that might be caused by pregnancy and childbirth, one of which is by minimizing labor pain, is necessitated by a rise in pregnancy and childbirth. Both pharmaceutical and non-pharmacological methods have been used in various attempts to lessen childbirth pain. While pharmacological pain management is more efficient than non-pharmacological approaches, it is also more expensive and may result in side effects. While non-pharmacological techniques are less expensive, straightforward, efficient, and risk-free (Mander, 2013).

In addition to causing uncoordinated *uterine activity*, pain can also lead to prolonged labor, which can endanger both the mother and the fetus' lives. Mothers tend to select the simplest and fastest method of pain relief when they are experiencing intense pain during labor. Drugs might cause harmful side effects such as *prenatal hypoxia*, *neonatal respiratory depression risk*, and *decreased heart and central nervous system activity* (CNS).) and elevated body temperature of the mother, which can affect the fetus (Mander, 2013).

The principles of adequate pain treatment, which include minimizing anxiety, routinely monitoring pain, giving the right analgesics for best pain relief, and reviewing their efficacy, are crucial for midwives to perform. An essential component of patient care is effective pain control. Medications and non-pharmacological therapies such as cutaneous stimulation are the two main types of interventions used in pain management (Zakiah, 2015).

Because the woman has control over her emotions and strength throughout labor, non-pharmacological techniques can boost satisfaction. The use of non-pharmacological techniques such as *relaxation*, *breathing exercises*, *movement and position changes*, *hydrotherapy*, *hot/cold therapy*, *massage (counter pressure)*, *music*, *guided imagery*, *acupressure*, and *aromatherapy* can increase a mother's comfort during childbirth and have an impact on how she copes with the delivery process (Mander, 2013). There are numerous methods for reducing pain, such as massage (counter pressure), rest, hot and cold compresses, and others (Perry and Potter, 2013).

In the first active phase at BPM Ellok Ekaria Safitri Gedongkiwo Yogyakarta, counter pressure massage had an impact on mothers' pain levels, according to Rilyani's research (2020). According to the Triwibowo Research (2019), there is a correlation between counter pressure and labor pain levels in active phase I inpartum women with a coefficient value $p = 0,013$ with $\alpha = 0,05$ mean $p < \alpha$ According to Rezeqi's research (2020), the husband's *counter-pressure* practice was 75% effective. 60 percent less discomfort was experienced by the wife after her husband applied *counterpressure*. In order to lessen the level of mother pain during delivery, it is crucial to involve the husband or partner in this study's recommendations.

Based on the results of a pre-survey conducted on January 1-4, 2022, the data shows that in December of 109 mothers who gave birth, 15 people experienced childbirth complications with details: as many as 6 (40%) people experienced non-progressive labor, 3 (20%) people experienced

premature rupture of membranes, 2 (13.3%) people experienced PER/PEB, 2 (13.3%) people with breech delivery and 2 (13.3%) mothers experienced uterine contractions that were not well coordinated. Then the researchers conducted observations on three patients who were ready to give birth. All three of the respondents—2 on an 8-point scale and 1 on a 7—said that there was pain experienced during delivery. When the mother was in labor, the woman exhaled through her nose, urged her to be patient, and counseled her husband and family to support her. However, she did not offer *counterpressure* massage therapy, despite the fact that theory and related research indicated that *counterpressure* massage may have an impact on labor pain.

RESEARCH METHODOLOGY

The population in this study were all mothers in the first stage of labor with an opening of 4-10 cm in the working area of the Tanjungsari Natar Health Center, South Lampung Regency where in the period April - July 2022 based on the delivery bag there were 52 mothers who will give birth, in this study, a sample of 30 people will be taken for treatment (*counter pressure*).

The goal of this quantitative study using a quasi-experimental design was to ascertain the impact of *counter pressure* on the labor pain scale. All women giving birth at the first stage of opening (4–10 cm) were the study's goal, and the research was conducted in the Tanjung Sari Natar Health Center's operational region in the South Lampung Regency. April to June 2022 saw the study's execution. An observation sheet for the VAS was utilized to collect the data. There was univariate and bivariate data analysis (Wilcoxon test). Pain measurement using *the Numerical Rating Scale* (NRS)

RESEARCH RESULTS

Tabel 1
Characteristics of the mother in labor

Variable	Category	n	%
Age	20-35 Year	26	86.7
	>35 Year	4	13.3
Parity	Primipara	11	36.7
	Multipara	9	30.0
	Grandemulti	10	33.3

According to the findings, 86.7% of respondents are known to be at low risk, whereas 13.3% of respondents are known to be at risk. The majority of the 30 respondents—36.7%—were

primiparas, followed by grandemultis (33.3%) and multiparas (30.0%).

Univariate Analysis

Table 2

In the South Lampung Regency's Tanjungsari Natar Health Center work region in 2022, the typical scale of labor pain during the active stage of the first stage prior to receiving counter pressure therapy

Variable	Labor pain before being given therapy <i>counter pressure</i>
N	30
Mean	7.0
SD	0.7
Min	6
Max	8

According to the data in table 1 above, the average labor pain before receiving counter pressure

therapy is 7.0, with a standard deviation of 0.7, a minimum value of 6, and a maximum value of 8.

Tabele 3

In the Tanjungsari Natar Health Center work area in South Lampung Regency in 2022, the average scale of labor pain in the active phase of the first stage following counter pressure therapy

Variable	Labor pain after being given therapy <i>counter pressure</i>
N	30
Mean	5,7
SD	1.1
Min	4
Max	7

According to the information in table 2 above, the average labor pain following *counter pressure*

therapy is 5.7, with a *standard deviation* of 1.1, a minimum value of 4, and a maximum value of 7.

Table 4
Research Data Normality Test

Variable	Labor pain	<i>Shapiro-Wilk</i>	Info
Counter therapy <i>pressure</i>	Before	0.000	Abnormal
	After	0.000	Abnormal

According to table 3 above, the Shapiro-Wilk data normality test for both variables in the intervention

group before and after yielded a significant value of 0.05, indicating that the data are not normal.

Bivariate Analysis

Table 5

The impact of *counterpressure* on the active phase I labor pain scale in the Tanjungsari Natar Health Center's working area, South Lampung Regency, in 2022

Labor Pain	Mean	Median	Min-Max	P- Value
Before	7.0	7.0	6-8	0.000
After	5,7	6.0	4-7	

Based on table 5.5 above, the Wilcoxon test results revealed p-value = 0.000 (p-value < = 0.05),

indicating that counterpressure has an impact on the Active Phase I labor pain scale in the working area of

Tanjungsari Natar Health Center in South Lampung Regency in 2022.

DISCUSSION

The impact of counterpressure on the active phase I labor pain scale in the Tanjungsari Natar Health Center's working area, South Lampung Regency, in 2022

Based on the results of the Wilcoxon test, it was found that $p\text{-value} = 0.000$ ($p\text{-value} < 0.05$) which means that there is an effect of counter pressure on the active phase I labor pain scale in the working area of Tanjungsari Natar Health Center, South Lampung Regency in 2022.

Both psychological reactions and bodily reflexes can cause pain. Symptoms of labor pain are easily identifiable. In response to pain, the sympathetic nervous system becomes more active, which can modify the skin's color, blood pressure, pulse, and respiration. Additionally quite frequent are episodes of nausea, vomiting, and profuse perspiration. During the early stage of labor, uterine contractions that produce cervical dilatation, effacement, and uterine ischemia are what cause pain. Visceral pain that the mother has in her lower abdomen and radiates to her lumbar area, back, and thighs is caused by cervical dilatation and uterine ischemia. The mother has pain during contractions, which subsides or stops at the break between them. In this study, counterpressure was used as a pain management technique (Mander, 2013)

A *counter pressure massage* is one that uses the base or fist of one hand to apply constant pressure when the patient contracts their sacrum. In a counterpressure massage, the pressure can be administered either directly or in little circles. Back pain from childbirth can be effectively relieved using this method. It should be understood, however, that some mothers find uncomfortable being handled or massaged during contractions because the contractions are so intense that the mother is no longer able to receive any stimulation to the body. (2011) Danuatmadja and Meilasari.

The active phase of the first stage of labor is when *counterpressure* is most effective at reducing labor pain. By using a counterpressure massage technique, one can block the transmission of pain signals to the spinal cord and brain. In addition, by applying intense pressure, one can also stimulate the endorphins that are responsible for pain. situated at the synapses between spinal cord and brain nerve cells, where it is possible to block the passage of pain signals and so reduce pain perception (Nastiti, 2012).

This is consistent with Pesak's (2014) study, which displays a significance level below 5% ($p=0.000 < 0.05$). Thus, counterpressure works well at the Manado Adventist Hospital to lessen the

degree of discomfort during the initial stage of the active phase of normal labor. According to Surtiningsih's (2015) research, both procedures are good at reducing pain, however the counter pressure technique's average pain reduction—which is 2,364—is higher than the endorphin massage technique's average pain reduction, which is 2.273. A conclusion that the counter pressure technique is more effective than the endorphin massage approach can be drawn from the t-test results, which also showed that the *counter pressure* technique was higher at 8,480 than the endorphin massage technique, which was 8,333. According to Krestanti's (2013) research, the value of pain decreased by 3.27 following the intervention. The effectiveness of the *Back-Effleurage technique* and the *Counter-Pressure technique* on the degree of low back discomfort in the initial stage of the active phase of labor is significantly different, with a p value ($0.046 < 0.05$). The Counter-Pressure technique, which has a mean value of 3.63 and is higher than the mean for the Back-Effleurage technique of 2.92, is one of the two that is more successful in alleviating low back pain during labor..

The researcher claims that a variety of factors, such as the study's findings from mothers who obtained the proper counterpressure technique to feel mild labor pain, contribute to the reduction of pain during delivery. This is due to the fact that applying counter pressure causes both fear and muscle tension to be reduced. The mother feels the touch, which eases any tension or worry she may be experiencing, and she also feels the counterpressure when it is applied. In a *counterpressure* massage, the pressure can be administered either directly or in little circles. Back pain from childbirth can be effectively relieved using this method. It should be understood, however, that some mothers find uncomfortable being handled or massaged during contractions because the contractions are so intense that the mother is no longer able to receive any stimulation to the body. Health workers must understand this and respect the wishes of the mother.

The mother's personality plays a significant role in pain; mothers who are naturally tense and anxious will take longer to deal with stress compared to women who are relaxed and confident. In mothers who have given birth but still experience pain, it may be due to the bad experience of the previous childbirth which will also increase anxiety. . Laboring mothers who are worn out and whose sleep has been interrupted by the discomforts of late pregnancy will find it harder to handle their agony.

Based on the findings, it is known that respondents typically had an opening between 6.6 and 7 cm, with a maximum of 11 (36.7% of respondents) having an opening between < 7 and

11, and a maximum of 4 (13.3%) having an opening greater than > 7, with a pain intensity before intervention between 6 and 8, and a maximum of 1 person who did not experience a change in pain following the intervention, specifically in primiparous mothers by coming at the opening 9, where from the pain scale 7 and after the intervention was fixed with

Each respondent's pain scale experienced various changes, and 6 (20.0%) of the respondents had pain ratings that remained unchanged both before and after counterpressure interventions. This is likely because the study did not account for a number of variables, including age and parity. a mother's perception of pain during labor, the presence of other factors such as the mother's age—the average mother who does not experience changes in the pain scale is between 21 and 27 years old—or the perception of maternal pain during labor so that the mother does not feel changes in labor pain from the actions taken. There are various hypotheses that claim that age impacts a person's perception of pain, even though no theory specifies the age at which pain has a low threshold. Age-related brain degeneration results in a reduced pain threshold and decreased pain perception in older individuals.

Additionally, the possibility of parity played a role because the majority of respondents who did not notice a decline in their sense of searching were primiparous mothers, who, according to the researchers, were unable to anticipate childbirth because they had never given birth or experienced the pain associated with it. Due to the fact that in primiparas the effacement process typically occurs earlier than cervical dilatation, the birthing process is also different from that in multiparas. Comparatively, cervical effacement and dilatation happen simultaneously in multipara. This influence is brought on by multiparous mothers' prior experiences, which are one of the things that might affect how intensely pain is felt by various people.

As long as the mother is confident that she will get the necessary assistance and support, support during childbirth such as praise, reassurance, measures to increase maternal comfort, physical contact, explanations about what happened during labor and birth, and a constant friendly attitude can divert the mother. Other elements that may influence the degree of pain experienced include belief that childbirth is common. Because of this, the outcomes of this study were not consistent between each respondent. In order for the mother to feel comfortable with the delivery process and the need for support from the nearest family, in this case the husband who always offers support when the mother faces the labor process, it is hoped that health professionals can offer both physical and

psychological support, such as speaking softly and touching the patient.

Conclusion

Prior to receiving counter pressure therapy, the typical level of labor pain was 7. Out of the 30 responders, up to 8 (26.7%) had a pain scale < 7 and 7 (23.3%) had a pain scale > 7. The average labor pain following counterpressure therapy is 5.7, according to known statistics. There were 30 responders; up to 10 (33.3%) had a pain scale < 5.7 and up to 20 (66.7%) had a pain scale > 5.7. In the operating area of Tanjung Sari Natar Health Center, South Lampung Regency, in 2022, there is a counterpressure effect on the active phase I labor pain scale. (p-value = 0,000).

SUGGESTION

It is envisaged that they would be able to offer counterpressure SOPs and use this as a substitute for lessening maternal discomfort. It is anticipated that midwives would keep an eye on the group of expectant women, educate them about the birthing process so that they may begin managing it themselves, and counsel laboring mothers on how to deal with pressure. Provide midwives in the Puskesmas working region with *counter pressure* training so that they are all equipped to apply counter pressure. The birth attendant applies counterpressure in accordance with SOP to moms who plan to give birth in the Puskesmas' operating area.

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THE EFFECT OF ROSE AROMATHERAPY ON LABOR PAIN DURING 1 ACTIVE PHASE

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ABSTRAK : PENGARUH PEMBERIAN AROMATERAPI ROSE TERHADAP NYERI PERSALINAN SELAMA 1 FASE AKTIF

Latar Belakang: Kala I merupakan tahapan yang berlangsung dari terjadinya kontraksi uterus yang teratur sampai dengan dilatasi serviks lengkap. Kontraksi rahim pada persalinan menimbulkan kecemasan dan mengakibatkan nyeri persalinan yang sangat menakutkan bagi ibu bersalin. Di Amerika, dari National Vital Statistics Reports yang dilakukan oleh Centers for Disease Control and Prevention (CDC) proporsi operasi caesar di Amerika pada tahun 2013 sebesar 32,7% dari seluruh persalinan yang tercatat. Di Indonesia berdasarkan hasil Riskesdas 2013 menunjukkan angka kelahiran melalui operasi caesar adalah 19,9%.. Salah satu tumbuhan penting yang digunakan dalam aromaterapi adalah bunga mawar. Aroma bunga mawar efektif pada sistem saraf pusat, kandungan sytrinol dan 2-phenyl ethyl alcohol, pada bunga mawar dikenal sebagai zat anti ansietas. Menggunakan minyak mawar mengurangi kecemasan hingga 71% dalam persalinan dan hanya 14% dari mereka yang membutuhkan anestesi lokal.

Tujuan: Mengetahui pengaruh pemberian aromaterapi mawar terhadap nyeri persalinan fase aktif

Metode penelitian: Jenis penelitian kuantitatif, desain pre-experimental dengan pendekatan Two Group Pre-test – Post-test Design. Populasi dan sampel dalam penelitian ini adalah seluruh ibu bersalin fase aktif di wilayah kerja Puskesmas Branti Raya Natar yang berjumlah 42 orang yang terbagi dalam 2 kelompok, 21 orang luar dan 21 orang dengan teknik pengambilan sampel acidental. Intervensi penelitian memberikan 4 tetes aromaterapi mawar ke dalam 10 cc air melalui diffuser ultrasonik pada ibu bersalin. Alat ukur penelitian ini menggunakan Skala NRS. Analisis univariat dan bivariat menggunakan uji Man Witney. Penelitian ini dilakukan pada Juli 2022.

Hasil: Rata-rata hasil nyeri persalinan fase I aktif sebelum pemberian aromaterapi mawar rata-rata 8,14 nyeri yang berarti responden mengalami nyeri berat terkontrol. Sedangkan pada kelompok kontrol rata-rata nyeri sebesar 8,00 yang berarti responden mengalami nyeri berat terkontrol. Setelah diberikan aromaterapi dengan bunga mawar rata-rata nyeri sebesar 2,05 yang berarti responden mengalami nyeri ringan. Sedangkan pada kelompok kontrol rata-rata nyeri adalah 4,05 yang berarti responden mengalami nyeri sedang. P-value = 0,000<0,05 yang artinya ada pengaruh aromaterapi mawar terhadap nyeri persalinan Kala I Fase Aktif

kesimpulantambahkan

Saran : Dapat dijadikan syarat bagi klien untuk mengetahui cara mengalihkan nyeri, nyeri dapat dihilangkan tanpa harus menggunakan obat secara medis (farmakologi) nyeri dapat dikurangi dengan beberapa macam terapi komplementer seperti aromaterapi inhalasi mawar

Kata Kunci : Nyeri Persalinan, Aromaterapi Mawar, Ketika 1 Fase Aktif

ABSTRACT

Background: Kala I is a stage that takes place from the occurrence of regular uterine contractions until complete cervical dilatation. Uterine contractions in labor cause anxiety and result in labor pain is very scary for maternity mothers. In America, from the *National Vital Statistics Reports* conducted by the *Centers for Disease Control and Prevention* (CDC) the proportion of cesarean section in America in 2013 was 32.7% of all recorded deliveries. In Indonesia, based on the results of Riskesdas 2013, it shows that the birth of cesarean section is 19.9%.. One of the essential herbs used in aromatherapy is roses. The aroma of roses is effective on the central nervous system, the content of sytrinol and 2-phenyl ethyl alcohol, in roses is known as an anti-anxiety agent. Using rose oil reduced anxiety by 71% in labor and only 14% of those who needed local anesthesia.

Objective: Ditahu the effect of giving rose aromatherapy on labor pain during the Active Phase

Research methods: Types of quantitative research, *pre-experimental* design with a *Two Group Pre-test approach – Post-test Design*. The population and sample in this study were all maternity mother durings the active

phase in the branti raya natar health center working area, which was 42 people divided into 2 groups, 21 interventions and 21 controls using a purposive sampling technique. The research intervention provided 4 drops of rose aromatherapy into 10 cc of water via an ultrasonic diffuser in maternity mothers. The research measuring instrument uses the NRS Scale. Univariate and bivariate analysis using *Man Witney test*. This research was conducted in July 2022.

Results: The average results of active phase I labor pain before the administration of rose aromatherapy averaged 8.14 pain which means that respondents experienced controlled severe pain. Meanwhile, in the control group, the average pain was 8.00, which means that respondents experienced controlled severe pain. After giving rose aromatherapy with, the average pain was 2.05 which means that respondents experienced mild pain. Meanwhile, in the control group, the average pain was 4.05, which means that respondents experienced moderate pain. $P\text{-value} = 0.000 < 0.05$ which means that there is an influence of rose aromatherapy on labor pain Kala I Active Phase

Suggestion: For Future Researchers The results of this study can be used as a reference material for further research, conducting a comparative study with two inhalation interventions from other therapeutic aromas such as lemon and lavender, and still conducting a control group as a comparison.

Suggestion: Can be used as a requirement for clients to know how to divert pain, pain can be eliminated without having to use medication medically (pharmacology) pain can be reduced with several kinds of complementary therapies such as rose inhalation aromatherapy

Keywords: Labor Pain, Rose Aromatherapy, When 1 Phase Is Active

INTRODUCTION

The World Health Organization (WHO) estimates that 800 women die every day from pregnancy complications and the birth process. About 99% of all maternal deaths occur in developing countries. About 80% of maternal deaths are the result of increased complications during pregnancy, childbirth and after childbirth (WHO, 2014).

Childbirth is the process of removing the results of conception (fetus and placenta) that has been enough months or can live outside the womb through the birth canal or through other means, with the help of or without help (own strength) (Manuaba, 2014). The delivery process itself occurs through four stages of childbirth, namely kala I, kala II, kala III and kala IV.

Kala I is a stage that lasts from the occurrence of regular uterine contractions until complete cervical dilatation. At the time of 1 delivery, uterine contractions cause cervical dilatation and push the fetus through the birth canal. Uterine contractions in labor cause anxiety and result in labor pain is very scary for maternity mothers. Relaxation is needed to treat the pain of the 1st time feeling felt by the maternity mother (Cunningham, 2011).

Childbirth during I is said to extend when it has lasted more than 24 hours in primi and 18 hours in multi. when I is an elongated latent phase, the uterus tends to be in a hypertonic state, this can result in inadequate and only mild contractions (less than 15 mm Hg on the monitor screen), therefore uterine contractions become ineffective. The active phase lengthens when the quality and duration of contractions are good but suddenly weak dilatation

occurs then contractions become rare and weak and dilatation can stop. If this occurs and is supported by hypertonic contractions then it can result in membrane rupture (Pillitteri, 2002).

The causes of kala I extend psychologically, namely: fear, anxiety, solitude, stress or excessive anger can cause the formation of catecholamines (stress hormones) and give rise to slowing progress of labor, fatigue and despair are the result of a long predelivery (Simkin, 2015). Because when I extends is the state of his, the state of the birth canal, the state of the fetus, which is often encountered in the old I period, namely his abnormality (Ministry of Health, 1999). His inefficient or adequate will result in placental vasoconstriction, with impaired placental function will result in a reduced supply of O_2 to the fetus, as well as the development and growth of the fetus in the uterus is abnormal, subsequently can experience fetal distress, then the well-being of the fetus will be disturbed (Manuaba, 2014). According to David (2007) due to the lengthening of the I in the fetus there will be trauma, hypoxic damage, asphyxia and an increase in mortality and perinatal morbidity. In the mother, it results in decreased vigor, fatigue, infection and the risk of uterine rupture.

The World Health Organization (WHO) in 1985 once proposed a percentage standard that applies to developing and developed countries related to the average *sectio caesarea*, which ranges from 5-15% per 1000 live births (Sumelung, 2014). However, the current phenomenon based on the WHO report from data obtained in May 2012, the rate of cesarean section per 1000 live births in almost all European countries has increased, both developing

and developed countries. The increase that occurred in developing countries in Europe up to 7.88% was found in Azerbaijan, Georgia, Serbia, Uzbekistan and Tajikistan, while developed countries increased by about 2.36% such as in Finland and Canada (Katikireddi, et al 2013). In America, from the *National Vital Statistics Reports* conducted by the *Centers for Disease Control and Prevention* (CDC) the proportion of cesarean section in America in 2013 was 32.7% of all recorded deliveries. In Indonesia, based on the results of Riskesdas 2013, it shows that cesarean section births are 19.9% (Martin, et al 2015).

In Indonesia, the incidence of sectio caesarea also continues to increase both in teaching hospitals and in private hospitals. Based on research conducted by Basalamah and Galuardi in 2012, 64 hospitals in Jakarta recorded 17,665 births, from the birth rate as many as 35.7-55.3% gave birth with sectio caesarea. Meanwhile, other data from Cipto Mangunkusumo Hospital Jakarta stated that from 404 deliveries per month, 30% of deliveries were found with sectio caesarea. And of the sectio caesarea deliveries about 13.9% were requests for sectio caesarea performed without medical considerations (Kasdu, 2013).

According to a WHO report that was published in 2014, the Maternal Mortality Rate (MMR) in the world reached 289,000 people. Where divided into several countries, including the United States reaching 9300 inhabitants, North Africa 179,000 inhabitants and Southeast Asia 16,000 inhabitants. For MMR in Southeast Asian countries including Indonesia reaching 214 per 100,000 live births, the Philippines 170 per 100,000 live births, Vietnam 160 per 100,000 live births, Thailand 44 per 100,000 live births, Brunei 60 per 100,000 live births, and Malaysia 39 per 100,000 live births (WHO, 2014).

Based on the 2012 Indonesian Demographic and Health Survey (SDKI), the maternal mortality rate (related to pregnancy, childbirth, and puerperium) is 359 per 100,000 live births. This kamatian number is still quite high, especially when compared to neighboring countries (SDKI, 2012).

Pain is an unpleasant emotional and sensory experience that arises from actual or potential tissue damage or indicates the presence of damage. There are various non-pharmacological and pharmacological methods that can be used to help mothers cope with labor pains. The method chosen depends on the situation, the availability and choice of the mother and her childbirth helper (Maryunani, 2010).

Pain in childbirth is uterine contraction pain that can result in increased activity of the sympathetic nervous system, changes in blood pressure, heart rate, breathing with skin color and if not treated immediately it will increase worry, tension, fear and stress (Maryunani, 2010).

The appearance of pain is closely related to receptors and the presence of stimuli. The pain receptor in question is the nociceptor, which is a very free nerve endings that have or even myelin that is scattered on the skin and mucosa, specifically in the visceral organs, joints, arterial walls, liver and gallbladder. Pain receptors can provide prescriptions due to stimulation or stimulation. The stimulation can be in the form of chemical substances such as histamine, brakidini, prostaglandins, and various acids that are released if there is other damage can be thermal, electrical or mechanical (Maryunani, 2010).

Pain seems to be a necessity that accompanies childbirth. Pain in the first contractions is a sign in the mother that she is about to give birth. If the mother does not feel all, then it is likely that the baby is in the wrong place. The increase in pain, little by little, signals the extent to which labor is in stages. How to Overcome Non-Pharmacological Pain Treatments include looking for ways to be comfortable, don't stand still, massage, take a deep breath, use water and Relaxation (Nolan, 2010).

One of the essential herbs used in aromatherapy is roses. The aroma of roses is effective on the central nervous system. Two ingredients of rose aromatherapy, sytrinol and 2-phenyl ethyl alcohol, in roses are known as anti-anxiety agents. Using rose oil reduced anxiety by 71% in labor and only 14% of those who needed local anesthesia (Kheirkhah, et al, 2014).

RESEARCH METHODS

Type of quantitative research, *pre-experimental* design with *Two Group Pre-test approach – Post-test Design*. The population and samples in this study were all maternity mothers during the active phase I in the Branti Raya Natar Health Center Working Area, which was 42 people divided into 2 groups, 21 interventions and 21 controls, *accidental sampling* techniques. The research intervention provided 4 drops of rose aromatherapy into 10 cc of water via an ultrasonic diffuser in maternity mothers. The research measuring instrument uses the NRS Scale. Univariate and bivariate analysis using *Man Witney test*. This research was conducted in July 2022.

RESULT**Characteristics of Respondents**

Table 1
Characteristics of Respondents in the Working Area

Characteristic	Intervention		Mean		p-value
	f	P (%)	Pretests	Postes	
Age					
Age at Risk < 20 and >35	1	4,8	7,85	3,08	0,000
Age Not at Risk 20-35	20	95,2	7,00	2,00	
Gestational Age					
38 Weeks	5	23,8	8,17	2,83	0,000
39 Weeks	9	42,9	7,14	3,00	
40 Weeks	7	33,3	8,00	3,50	
Parity					
Multipara	12	57,1	8,17	2,83	0,000
Primipara	9	42,9	7,14	3,00	
Education					
D3	1	4,8	8,00	2,50	0,079
S1	2	9,5	7,33	3,33	
Junior	5	23,8	7,43	2,71	
Sma	13	61,9	8,33	3,67	
Work					
Trade	2	9,5	8,00	4,00	0,002
Laborer	4	19,0	7,40	2,60	
Housewives	11	52,4	8,50	3,50	
Store Cashier	1	4,8	3,778	1,889	
Civil servants	3	14,3	2,882	1,647	
Self employed	-	-	2,375	0,929	
Body Mass Index					
BMI 18.6-24.9	15	71,4	2,733	1,333	0,001
BMI > 25	6	28,6	3,700	2,300	
Baby's Birth Weight					
Usual	12	57,1	7,10	1,83	0,000
Abnormal	9	42,9	6,45	2,00	

Table 2
Characteristics of Respondents in the Working Area

Characteristic	Control		Mean		p-value
	f	P (%)	Pretests	Postes	
Age					
Age at Risk < 20 and >35	6	28,6	7,66	2,28	0,000
Age Not at Risk 20-35	15	71,4	7,12	2,11	
Gestational Age					
38 Weeks	7	33,3	8,17	2,83	0,000
39 Weeks	6	28,6	7,14	3,00	
40 Weeks	8	38,1	8,00	3,50	
Parity					
Multipara	15	71,4	6,33	2,12	0,000
Primipara	6	28,6	7,89	2,96	
Education					

D3	2	9,5	6,23	1,23	0,000
S1	1	4,8	7,55	2,37	
Junior	14	66,7	6,34	1,45	
Sma	4	19,0	6,77	3,23	
Work					
Trade	2	9,5	6,52	2,06	0,002
Laborer	2	9,5	5,23	2,33	
Housewives	12	57,1	5,66	2,10	
Store Cashier	1	4,8	5,34	1,32	
Civil servants	3	14,3	4,55	2,11	0,060
Self employed	1	4,8	6,32	1,35	
Body Mass Index					
BMI 18.6-24.9	13	61,9	2,450	4,750	
BMI > 25	8	38,1	2,800	5,000	0,000
Baby's Birth Weight					
Usual	15	71,4	6,14	1,16	0,000
Abnormal	6	28,6	5,79	3,43	

Based on table 1 above, it is known that the highest characteristic in the most age intervention group was not at risk of 20-35 years as many as 20 respondents (95.2%) with a p-value of 0.000. The most gestational age was 39 weeks 9 respondents (42.9%) p-value 0.000. The most parity was multipara 12 respondents (57.1%) p-value 0.000. The highest education high school 13 respondents (61.9%) p-value 0.079. The most employment of housewives was 11 respondents (52.4%) p-value 0.002. The ideal body mass index of 15 respondents (71.4%) p-value is 0.000. The birth weight of a normal baby was 12 respondents (57.1%) with a p-value of 0.000.

It is known that the highest characteristic in the most age control group was not at risk of 20-35 years as many as 15 respondents (71.4%) p-value value 0.000. The most gestational age was 40 weeks gestational age 8 respondents (38.1%) p-value 0.000. The highest parity was multipara 15

respondents (71.4%) p-value 0.000. The most junior high school education was 14 respondents (66.7%) with a p-value of 0.0. The most employment of housewives was 12 respondents (57.1%). The ideal body mass index of 13 respondents (61.9%) p-value was 0.060. The birth weight of a normal baby was 15 respondents (71.4%) with a p-value of 0.000.

Univariate Analysis

Based on table 3 then can the average result of Active Phase I Childbirth Pain before giving rose aromatherapy in the Working Area of the Branti Raya Natar Health Center in South Lampung 2022, the average pain is 8.14 which means that respondents experienced controlled severe pain with the lowest pain score of 7 and pain highest 9. While in the control group the average pain was 8.00, which means that respondents experienced controlled severe pain with the lowest pain score of 7 and the highest pain of 9

Table 3
Average Results of Childbirth Pain During the Active Phase I Before Giving Rose Aromatherapy in the Working Area

Variable	N	Mean	Sd	One	Min-Max
Intervention Pretests	21	8,14	0,793	0,173	7-9
Control Pretests		8,00	0,632	0,138	7-9

Table 4
Average Results of Labor Pain During the Active Phase I After Giving Rose Aromatherapy in the Working Area of the Branti Raya Health Center Working Area

Variable	N	Mean	Sd	One	Min-Max
Postes Intervention	21	2,05	0,498	0,109	1-3
Postes Control		4,05	0,805	0,176	3-5

Based on table 4 then it can be seen the average result of childbirth pain Kala I Active Phase after giving rose aromatherapy in the Working Area of Puskesmas Branti Raya Puskesmas Branti Raya Natar Lampung Selatan Working Area 2022 with , average pain 2.05 which means that respondents experienced mild pain with the lowest pain score of 1 and highest pain 3. Meanwhile, in the control group, the average pain was 4.05, which means that respondents experienced moderate pain with the lowest pain score of 3 and the highest pain of 5..

Bivariate Analysis

The results of measuring labor pain during the active phase I by comparing pain after being given rose aromatherapy interventions in the intervention and control groups. The mean value of 2.05 in the intervention group means that the responden is in the mild pain category, and the *mean* value is 4.05 in the control group, which means that the responden is in the moderate pain category. The *mean rank* score was 11.43-31.57, which means that there was a significant difference in pain between the intervention and control groups.

Table 5
Effect of Rose Aromatherapy On Labor Pain During I Active Phase

Variable	N	Mean	Sd	Mean Rank	P -Value
Postes Intervention	21	2,05	0,498	11,43-31,57	0.000
Control	21	4,05	0,805		

After conducting the statistical test *k t-test*, the results of *p-value* = 0.00 < 0.05 were obtained, which means that there is an influence of giving rose aromatherapy on labor pain Kala I Active Phase in the , Work Area of the Branti Raya Natar Health Center, South Lampung in 2022.

RESEARCH DISCUSSION

Univariate Analysis

Average Results of Childbirth Pain During the Active Phase I Before Giving Rose Aromatherapy

The results of the study obtained the average results of active phase I labor pain before giving rose aromatherapy in the Working Area of the Branti Raya Natar Health Center in South Lampung in 2022, an average pain of 8.14 which means that respondents experienced controlled severe pain with the lowest pain score of 7 and the highest pain 9. While in the control group the average pain was 8.00, which means that respondents experienced controlled severe pain with the lowest pain score of 7 and the highest pain of 9.

In line with the opinion expressed by the *International Association for study of pain* (IASP; Maryunani, 2010), Pain as an unpleasant sensory or emotional experience, related to the presence or

potential presence of tissue lesions. Pain can be further explained as a complex, individual, and multi-factor phenomenon, which is influenced by several factors, namely physiological, biological, sociocultural and economic.

In line with the research conducted by Dinda (2017) on the difference in Pain Intensity Techniques for Giving Warm Water Compresses And Aroma Therapy Roses In Maternity Mothers When I Active Phase . The highest pain intensity before being given rose therapy aroma at BPM Patmi Hartati, Kediri Regency was the 8th pain scale and the lowest pain scale 4. The highest pain intensity after being given rose therapy aroma at BPM Patmi Hartati, Kediri Regency, decreased to a pain scale of 7 and the lowest pain scale of 3.

According to researchers, labor pain is a physiological thing that occurs in every delivery.

In accordance with the opinion of Zakiyah (2015) which states that pain management can be pharmacological and non-pharmacological, and one of them is distraction or transfer of response. In the group that was given lemon inhalation intervention, experienced the lowest pain score of 4 and the highest pain of 8 and an average of 5.72 which

means that the average respondent experienced pain with a moderate pain category

Average Results of Labor Pain During the Active Phase I After Giving Rose Aromatherapy

The results of the study obtained the average results of childbirth pain Kala I Active Phase after giving rose aromatherapy in the Working Area of the Branti Raya Health Center Working Area of the Branti Raya Health Center Natar Lampung Selatan in 2022 with , an average pain of 2.05 which means that respondents experienced mild pain with the lowest pain score of 1 and pain highest 3. Meanwhile, in the control group, the average pain was 4.05, which means that respondents experienced moderate pain with the lowest pain score of 3 and the highest pain of 5.

In line with the opinion expressed by Mc. Caffery, 1979; Zakiyah, 2015) Pain is an elusive, complex and mystery phenomenon that affects a person and his existence is known when someone experiences it. Pain is a very unpleasant experience that a person feels towards a certain stimulus and cannot be shared with others. pain is an unpleasant sensory and emotional experience resulting from real and potential tissue damage (IAFSP, 2010; Zakiyah, 2015).

In line with research conducted by Sholehah (2020) The Effect of Rose Essential Oil Aromatherapy on the Intensity of Labor Pain During the 1st Active Phase at the Pangalengan Health Center, Bandung Regency. The average labor pain scale based on the Numeric Rating Scale (NRS) before the intervention was 5.43 with a standard deviation of 1.516. After the intervention of aromatherapy administration of rose essential oil, the average labor pain scale was 4.50 with a standard deviation of 1.85. It can be seen that the average value of the difference between before and after the intervention is 0.93 with a standard deviation of 0.33.

In this study, it had pain with a controlled severe pain category and after being given the intervention decreased to mild pain. This is due to the fact that labor pains are physiological. Childbirth during 1 active phase, the mother will experience recurrent hiss which causes uterine contractions to increase then stimulate pain to the pain receptors that send signals to the spinal cord, pain signals from the spinal cord will be sent to the hypothalamus which conveys sensory information on the body so that the mother will feel pain.

After being given rose aromatherapy, the pain decreases to mild, this is due to the content of rose essential oil which can stimulate the hypothalamus nerve to secrete endorphine substances so that

respondents can feel relaxed, and result in a decrease in pain.

In the opinion of researchers, aromatherapy affects the limbic system in the brain that affects emotions, mood and memory, to produce neurohormonesin endorphins and encephalins that serve to relieve pain and serotonin that serves to relieve stress and anxiety when facing childbirth.

Bivariate Analysis

Effect of Rose Aromatherapy On Labor Pain During I Active Phase in the Working Area of Puskesmas Branti Raya Natar Lampung Selatan 2022

The results of measuring labor pain during the active phase I by comparing pain before and after rose aromatherapy were given, an average pain of 8.14 which means that respondents experienced controlled severe pain with the lowest pain score of 7 and the highest pain of 9. Furthermore, in the second measurement, the average pain was 3.62, which means that respondents experienced mild pain with the lowest pain score of 2 and the highest pain of 6.

After conducting the statistical test *k t-test*, a *p-value* = 0.0 , <0.05 was obtained, which means that there is an influence of rose aromatherapy on labor pain Kala I Active Phase in the Working Area of the Branti Raya Natar Health Center, South Lampung in 2022

In line with the opinions expressed by Kheirkhah et al. (2014) One of the essential herbs used in aromatherapy is roses. The aroma of roses is effective on the central nervous system. Two ingredients of rose aromatherapy, sytrinol and 2-phenyl ethyl alcohol, in roses are known as anti-anxiety agents. Using rose oil reduced anxiety by 71% in labor and only 14% of those who needed local anesthesia.

In line with research conducted by Sholehah (2020) The Effect of Rose Essential Oil Aromatherapy on the Intensity of Labor Pain During the 1st Active Phase at the Pangalengan Health Center, Bandung Regency. The results of the statistical test obtained a value of $P = 0.0001$ with a significant level of $p < 0.05$ value, so it can be concluded that based on the Numeric Rating Scale (NRS) pain scale instrument, there is an effect of aromatherapy of rose essential oil on reducing the intensity of labor pain during the active phase I.

In this study, labor pain was obtained when viewed from the highest characteristics in the intervention group the most age was not at risk of 20-35 years as many as 20 respondents (95.2%) with a *p-value* of 0.000. The most gestational age was 39 weeks 9 respondents (42.9%) *p-value* 0.000. The most parity was multipara 12 respondents (57.1%) *p-*

value 0.000. The most employment of housewives was 11 respondents (52.4%) p-value 0.002. The ideal body mass index of 15 respondents (71.4%) p-value is 0.000. The birth weight of a normal baby was 12 respondents (57.1%) with a p-value of 0.000.

The highest characteristic in the most age control group was not at risk of 20-35 years as many as 15 respondents (71.4%) p-value value 0.000. The most gestational age was 40 weeks gestational age 8 respondents (38.1%) p-value 0.000. The highest parity was multipara 15 respondents (71.4%) p-value 0.000. The most junior high school education was 14 respondents (66.7%) with a p-value of 0.000. The most employment of housewives was 12 respondents (57.1%). The birth weight of a normal baby was 15 respondents (71.4%) with a p-value of 0.000.

Other factors that can affect the intensity of labor pain are age and parity factors. Younger mothers have more intense pain sensory than older mothers. Young age tends to be associated with a psychological condition that is still unstable which triggers anxiety so that the pain felt is stronger. Age is also used as a factor in determining tolerance to pain. In primiparous maternal parity, the intensity of uterine contractions is stronger than in multipara mothers and multipara mothers who have previous labor experiences will be easier to adapt to pain compared to mothers who have never had experience in this case..

Although in this study there was no relationship between parity and labor pain, the intensity of labor pain, one of which was influenced by the history of childbirth. A mother who has experienced childbirth will understand how the pain will be felt during childbirth. Meanwhile, mothers who have never given birth do not know how the pain will be felt for the first time in the delivery process, especially in primipara. The cervix in primiparous requires more energy to stretch it, thus causing greater intensity of contractions during the I time of labor. Research states that most multipara experience moderate levels of pain, while in primiparous they tend to experience severe pain levels. However, in this study, respondents experienced more severe pain in multipara, this is because the number of multiparas in this study was more than in primipara.

According to researchers acute pain in childbirth when 1 is active can be controlled with nonpharmacology techniques, aromatherapy is one of the nonpharmacological methods that can reduce pain in childbirth during 1 active phase, one of the techniques that can be applied is lemon inhalation aromatherapy to reduce the intensity of client pain in

childbirth during 1 active phase, this technique is very easy and effective to reduce the intensity of pain in clients during the active phase because of the aroma rose therapy.

Rose essential oil contains several components with varying concentrations that can stimulate the central nervous system especially the locus cereleus to secrete noradrenaline which is a stimulant so that it can affect a person's cognitive abilities. Other literature also reports that the impact of rose essential oil can stimulate and control sympathetic work in the central nervous system so that it can affect concentration and memory. In other studies it was also mentioned that rose aromatherapy has the potential to affect the limbic system especially the amygdala.

Aromatherapy according to Purwandari, Rahmalia, & Sabrian (2014) has a mechanism of action on the human body that takes place through two systems, namely the body circulation and the olfactory system. Psychic conditions can be influenced by fragrances. In accordance with Balkam's theory (2015) Proper and soothing aromatherapy can reduce pain or pain during labor. One type of aromatherapy that is safe to use for pregnancy and childbirth is rose aromatherapy. Roses are anti-depressant so they can calm the soul. Aromatherapy of roses inhaled will influence the emotional reaction to pain through manipulation of the limbic system which is set to produce a feeling of relaxation, pleasure and calm adding that relaxation has shown a change in the client's perception of pain.

In this study, there was 1 respondent who matched a very good decrease in pain from a score of pretest 9 and postes 2 with a difference of 7 decreases, a 24-year-old mother, and a housewife. The age of 20-35 years is a healthy age to get pregnant and give birth. Age determines a mother's health, mothers are said to be at high risk if pregnant women are under 20 years old and over 35 years old. Furthermore, in addition to the age of the mother who is still in the prime category during childbirth, the mother's work is also a cause of labor pain. Mothers who give birth to housewives' work do more physical activity than mothers who don't work. Good physical activity will improve body fitness, mopping in a squatting position or washing clothes in a sitting position, will help the mother relax the pelvic area, thus helping the dilatation of the mother's pelvis.

CONCLUSION

The results of the study obtained the average results of active phase I labor pain before giving rose aromatherapy with an average pain of 8.14, which means that respondents experienced controlled

severe pain. Meanwhile, in the control group, the average pain was 8.00, which means that respondents experienced controlled severe pain. Active Phase I labor pain after rose aromatherapy administration with, an average pain of 2.05 which means that respondents experienced mild pain. Meanwhile, in the control group, the average pain was 4.05, which means that respondents experienced moderate pain. $P\text{-value} = 0.0, <0.05$ which means that there is an influence of rose aromatherapy on labor pain Kala I Active Phase in the Working Area of the Branti Raya Natar Health Center in South Lampung 2022.

SUGGESTION

For Science It is hoped that the results of this research can provide insight as well as knowledge for the development of obstetrics and as reference material in subsequent research.

For Families and Families The results of this research can be used as a client input in order to know how to divert pain, through complementary therapies such as rose inhalation aromatherapy

For Future Researchers The results of this study can be used as a reference material for further research, conducting a comparative study with two inhalation interventions from other therapeutic aromas such as lemon and lavender, and still conducting a control group as a comparison.

REFERENCE

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THE FACTORS RELATED TO THE INCIDENCE OF ANEMIA IN PREGNANT WOMEN

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ABSTRAK : FAKTOR-FAKTOR YANG BERTHUBUNGAN DENGAN KEJADIAN ANEMIA PADA IBU HAMIL

Latar Belakang: Anemia pada ibu hamil merupakan salah penyumbang angka kematian ibu. Prevalensi anemia di Indonesia pada ibu hamil yaitu 40,1%. Anemia pada ibu hamil juga berkontribusi terhadap peningkatan kematian perinatal, berat badan lahir rendah, kematian janin serta terjadinya *abortion*.

Tujuan: Untuk mengetahui faktor-faktor yang berhubungan dengan kejadian anemia pada ibu hamil di Wilayah Kerja UPTD. Puskesmas Krui Kabupaten Pesisir Barat tahun 2022.

Metode: Jenis penelitian ini adalah kuantitatif dengan rancangan *cross sectional*. Populasi dalam penelitian ini adalah seluruh ibu hamil yang usia kehamilannya ≥ 20 minggu di Wilayah Kerja UPTD. Puskesmas Krui pada bulan Juli 2022 dengan jumlah 142 orang dengan sampel 110 orang. Teknik sampel yang digunakan yaitu *accidental sampling*. Analisis data dalam penelitian ini menggunakan univariat dan bivariat (*chi-square*).

Hasil: Ada hubungan pendidikan ($p=0,000$), pengetahuan ($p=0,000$), pendapatan keluarga ($p=0,002$), status gizi ($p=0,004$), konsumsi tablet Fe ($p=0,021$), paritas ($p=0,000$), dan jarak kehamilan ($p=0,000$) dengan kejadian anemia pada ibu hamil. Sedangkan variabel usia ($p=0,523$) tidak berhubungan dengan kejadian anemia pada ibu hamil.

Kesimpulan: Ada hubungan pendidikan, pengetahuan, pendapatan keluarga, status gizi, konsumsi tablet Fe, paritas, dan jarak kehamilan dengan kejadian anemia pada ibu hamil. Sedangkan variabel usia tidak berhubungan dengan kejadian anemia pada ibu hamil.

Saran untuk ibu hamil agar lebih proaktif dalam memperoleh informasi tentang pencegahan anemia dan rutin mengkonsumsi tablet Fe.

Kata Kunci : Anemia, Jarak Kehamilan, Konsumsi Tablet Fe, Pengetahuan, Status Gizi

ABSTRACT

Background: Anemia in pregnant women was a contributor to maternal mortality. The prevalence of anemia in pregnant women in Indonesia was 40.1%. Anemia in pregnant women also contributed to an increase in perinatal mortality, low birth weight, fetal death and the incidence of abortion.

Purpose: To determine the factors related to the incidence of anemia in pregnant women at Regional Technical Implementing Unit's Work Area of Krui Community Health Center, West Pesisir Regency in 2022.

Methods: This study was quantitative research with a cross sectional design. The population in this study were all pregnant women whose gestational age was in 20 weeks in the Regional Technical Implementing Unit's Work Area of Krui Community Health Center in July 2022. This study used 142 pregnant women as total population with a sample of 110 pregnant women. The sampling technique used was accidental sampling. Data analysis in this study used univariate and bivariate with chi-square test.

Results: Was a relationship between education ($p=0.000$), knowledge ($p=0.000$), family income ($p=0.002$), nutritional status ($p=0.004$), consumption of Fe tablets ($p=0.021$), parity ($p=0.000$), pregnancy spacing ($p=0.000$), and age ($p=0.523$).

Conclusion: There was a relationship between education, knowledge, family income, nutritional status, consumption of Fe tablets, parity, and pregnancy spacing and the incidence of anemia in pregnant women. While the variable of age was not related to the incidence of anemia in pregnant women.

Suggestions for pregnant women to be more proactive in obtaining information about anemia prevention and regularly consuming Fe tablets.

Keywords : Anemia, Consumption of Fe, Knowledge, Nutritional Status, Pregnancy Spacing

INTRODUCTION

Anemia during pregnancy is a public health problem, especially in developing countries and is associated with adverse outcomes in pregnancy. The World Health Organization (WHO) defines anemia in pregnancy as a hemoglobin (Hb) concentration of less than 11 g/dl. Anemia is an important risk factor in pregnancy and is associated with an increased incidence of maternal and fetal morbidity and mortality. More than three percent of maternal deaths in Africa are directly attributable to anemia. Anemia in pregnant women also contributes to an increase in perinatal mortality, low birth weight, fetal death and the occurrence of abortion. Anemia in pregnancy can also cause dysfunction and heart failure (Anlaaku & Anto, 2017).

Anemia in pregnant women is a contributor to maternal mortality. Indonesia's demographic and health survey data (IDHS) 2017 states that the MMR ratio in Indonesia is 177 per 100,000 live births in 2017. In the Sustainable Development Goals (SDGs), the MMR target is 70 per 100,000 live births in 2030 (Ministry of Health). RI, 2017).

World Health Organization(WHO) shows that it is estimated that about 33% of people in the world suffer from anemia, with iron deficiency being considered the main cause, and anemia accounting for almost 9% year on year with disability problems. It is also estimated that worldwide 32 million pregnant women are anemic and 496 million non-pregnant women are anemic (WHO, 2020).

The prevalence of anemia in Indonesia in pregnant women according to the SKRT is still quite high, namely 40.1%. The results of the Basic Health Research show that 73.2% of women aged 15-49 years have received blood-supplement tablets containing iron-folic acid. However, the incidence of anemia in pregnant women still reaches 40 - 50%, meaning that 5 out of 10 pregnant women in Indonesia experience anemia (Kemenkes RI, 2018). Data obtained from the Lampung Provincial Health Office in 2018 the prevalence of anemia in pregnant women is still quite high, namely 100 pregnant women out of 500 pregnant women (33.29%). While the achievement target for anemia in pregnancy in Indonesia is 28% (Lampung Provincial Health Office, 2018).

Based on the Health profile of Pesisir Barat Regency in 2019, there were 583 (18.84%) cases of anemia and 7.4% cases of SEZ. Meanwhile, in 2020 there were 344 (13%) pregnant women with anemia and 6.8% cases of KEK. In 2019 the coverage of anemia cases was from 11 puskesmas with 3 major puskesmas with the highest presentation, namely Krui Health Center 199 cases (28.63%), Ngambur Health Center 123 cases (22.78%), Biha Health

Center 98 cases (21.17%). Meanwhile, in 2020 the coverage of anemia cases with 3 major health centers with the highest presentation is Krui Health Center (28.6%), Bengkunt Health Center (25.6%), and Bengkunt Belimbing Health Center (11.1%) (Pesisir Barat District Health Office, 2019;2020). The incidence of anemia in pregnant women in Pesisir Barat Regency is higher than the incidence of anemia in West Lampung Regency. Based on data from the West Lampung District Health Office, in 2019 the number of anemia cases in pregnant women reached 112 cases, and in 2020 there was a slight increase of 121 cases (West Lampung Health Office, 2019; 2020). While at the Krui Health Center in 2018 it was the health center with the 3rd highest anemia cases, namely there were 234 (27.2%) cases, in 2019 there were 105 (28.63%) pregnant women who experienced anemia and in 2020 there were 112 (28.63%) 28.6%) pregnant women with anemia. Meanwhile, in 2021 there were 83 (21.7%) cases of anemia in pregnant women. This shows that the case of anemia in pregnant women at the Krui Health Center has decreased, but is still the highest case compared to other cases such as KEK (Puskesmas Krui, 2021). and in 2020 there was a slight increase of 121 cases (West Lampung Health Office, 2019; 2020). While at the Krui Health Center in 2018 it was the health center with the 3rd highest anemia cases, namely there were 234 (27.2%) cases, in 2019 there were 105 (28.63%) pregnant women who experienced anemia and in 2020 there were 112 (28.63%) 28.6%) pregnant women with anemia. Meanwhile, in 2021 there were 83 (21.7%) cases of anemia in pregnant women. This shows that the case of anemia in pregnant women at the Krui Health Center has decreased, but is still the highest case compared to other cases such as KEK (Puskesmas Krui, 2021). and in 2020 there was a slight increase of 121 cases (West Lampung Health Office, 2019; 2020). While at the Krui Health Center in 2018 it was the health center with the 3rd highest anemia cases, namely there were 234 (27.2%) cases, in 2019 there were 105 (28.63%) pregnant women who experienced anemia and in 2020 there were 112 (28.63%) 28.6%) pregnant women with anemia. Meanwhile, in 2021 there were 83 (21.7%) cases of anemia in pregnant women. This shows that the case of anemia in pregnant women at the Krui Health Center has decreased, but is still the highest case compared to other cases such as KEK (Puskesmas Krui, 2021). While at the Krui Health Center in 2018 it was the health center with the 3rd highest anemia cases, namely there were 234 (27.2%) cases, in 2019 there were 105 (28.63%) pregnant women who experienced anemia and in

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Efforts to prevent and control anemia are carried out by the government through the provision of iron tablet supplementation with a daily dose of 1 item (60 mg iron and 0.400 mg folic acid) in succession for at least 90 days during pregnancy. The government program that has been implemented can be seen in the coverage rate of giving blood supplement tablets (TTD) to pregnant women in Indonesia in 2018 amounting to 81.16%. This figure has not reached the 2018 Strategic Plan target which should be 95% (Ministry of Health, 2019).

Anemia can be influenced by several factors such as socioeconomic, knowledge, education, and culture, Antenatal Care (ANC) visits, parity, age, husband's support, consumption patterns of Fe tablets, infectious diseases, and bleeding (Nurhaidah and Rostinah, 2021). Meanwhile, according to Ariyani (2016), the factors related to the incidence of anemia in pregnant women include age, parity,

pregnancy distance, nutritional status, frequency of antenatal care (ANC), economic status, knowledge, education level, culture and husband's support. Based on the results of research conducted by Handayani (2016), it was found that there was a relationship between consumption of Fe tablets, gestational distance, nutritional status and knowledge with the incidence of anemia in pregnant women ($p < 0.05$). Meanwhile, according to Afriyanti's research (2020) it was found that there was a relationship between education, family income,

The results of the preliminary study found that the number of pregnant women who experienced anemia at the Krui Health Center, Pesisir Barat Regency from January to November 2021 from 394 pregnant women found 83 (21.06%) pregnant women.

RESEARCH METHODS

In this research, the writer uses quantitative research. The research design used analytic observation with a cross sectional design. The population in this study was taken from the total number of pregnant women whose gestational age was 20 weeks in the UPTD Working Area. Puskesmas Krui in July 2022 with a total of 142 people and the sample in this study was 110 people who were selected based on inclusion and exclusion criteria, the sampling technique used purposive sampling. Analysis of univariate and bivariate data using chi square.

RESULTS

Univariate Analysis

Based on the table above, it is known that from 110 respondents, 38 (34.5%) respondents had anemia and 72 (65.5%) respondents did not.

Table 1
Distribution of the frequency of anemia in pregnant women in the UPTD Work Area. Krui Health Center West Coast District in 2022

Incidence of Anemia	Frequency	Percentage (%)
Anemia	38	34.5
No anemia	72	65.5

Table 2
Distribution of the frequency of education, knowledge, family income, age, nutritional status, consumption of Fe tablets, parity, and pregnancy distance among pregnant women in the UPTD Work Area. Puskesmas Krui Pesisir Barat Regency in 2022

Variable	Frequency	Percentage (%)
Education		
Low	32	29.1
Tall	78	70.9
Knowledge		
Not good	37	33.6
Well	73	66.4
Family Income		
Low	34	30.9
Tall	76	69.1
Age		
at risk	32	29.1
No Risk	78	70.9
Nutritional status		
Abnormal	28	25.5
Normal	82	74.5
Consumption of Fe . Tablets		
Not obey	39	35.5
Obey	71	64.5
Parity		
at risk	28	25.5
No Risk	82	74.5
Pregnancy Distance		
at risk	27	24.5
No Risk	83	75.5

Based on the table above, it is known that 78 (70.9%) respondents have higher education, 37 (33.6%) respondents have poor knowledge, 34 (30.9%) respondents with low family income, 78 (70.9%)) respondents with age not at risk, 82 (74.5%) respondents with normal nutritional status, 71 (64.5%) respondents obediently taking Fe tablets, 82 (74.5%) respondents with parity not at risk, and 83 (75.5%) respondents with a distance pregnancy is not at risk.

Bivariate Analysis

Based on the table above, it is known that from 32 respondents with low education, 23 (71.9%)

respondents were anemic and 9 (28.1%) respondents were not anemic. Meanwhile, from 78 respondents with higher education, 15 (19.2%) respondents were anemic and 63 (80.8%) respondents were not anemic. Chi square test results obtained p value $0.000 < 0.05$, meaning that there is a relationship between education and the incidence of anemia in the working area of UPTD. Puskesmas Krui Pesisir Barat Regency in 2022. The results of OR = 10,733 means that respondents with low education have a risk of 10,733 times the incidence of anemia.

Table 3
The relationship between education and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

Education	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	n	%	N	%		
Low	23	71.9	9	28.1	32	100	0.000	10,733 (4,133-27,876)
Tall	15	19.2	63	80.8	78	100		

Table 4
The relationship between knowledge and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

Knowledge	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	n	%	N	%		
Not good	22	59.5	15	40.5	37	100	0.000	5,225 (2,213-12,337)
Well	16	21.9	57	78.1	73	100		

Based on the table above, it is known that from 37 respondents with poor knowledge, 22 (59.5%) respondents had anemia and 15 (40.5%) respondents were not anemic. Meanwhile, from 73 respondents with good knowledge, 16 (21.9%) respondents had anemia and 57 (78.1%) respondents were not anemic. Chi square test results

obtained p value $0.000 < 0.05$, meaning that there is a relationship between knowledge and the incidence of anemia in the working area of UPTD. Puskesmas Krui Pesisir Barat Regency in 2022. The results of $OR = 5.225$ means that respondents with poor knowledge are at risk of 5.225 times for the incidence of anemia.

Table 5
Relationship between family income and the incidence of anemia in pregnant women in the Work Area UPTD. Puskesmas Krui Pesisir Barat Regency in 2022

Family Income	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	N	%	N	%		
Low	19	55.9	15	44.1	34	100	0.002	3,800 (1,619-8,919)
Tall	19	25.0	57	75.0	76	100		

Based on the table above, it is known that from 34 respondents with low family income, 19 (55.9%) respondents had anemia and 15 (44.1%) respondents were not anemic. Meanwhile, from 76 respondents with high family income, 19 (25.0%) respondents were anemic and 57 (75.0%) respondents were not anemic. Chi square test results

obtained p value $0.002 < 0.05$, meaning that there is a relationship between family income and the incidence of anemia in the UPTD work area. Puskesmas Krui Pesisir Barat Regency in 2022. The result of $OR = 3,800$ means that respondents with low family income are at risk of 3,800 times for the incidence of anemia.

Table 6
The relationship between age and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

Age	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	N	%	N	%		
at risk	13	40.6	19	59.4	32	100	0.523	1,451 (0.619-3.396)
No risk	25	32.1	53	67.9	78	100		

Based on the table above, it is known that from 32 respondents with age at risk, 13 (40.6%) respondents had anemia and 19 (59.4%) respondents were not anemic. Meanwhile, from 78 respondents with no risk age, 25 (32.1%) respondents had anemia and 53 (67.9%) respondents were not anemic. The results of the Chi

square test obtained p value $0.523 > 0.05$, meaning that there is no relationship between age at risk and the incidence of anemia in the working area of UPTD. Puskesmas Krui West Coast District in 2022. The results of $OR = 1.451$ means that respondents with age at risk have a chance of 1.451 times for the incidence of anemia.

Table 7

The relationship between nutritional status and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

Nutritional status	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	N	%	N	%		
Abnormal	16	57.1	12	42.9	28	100	0.004	3,636 (1,488-8.889)
Normal	22	26.8	60	73.2	82	100		

Based on the table above, it is known that from 28 respondents with abnormal nutritional status, 16 (57.1%) respondents had anemia and 12 (42.9%) respondents were not anemic. Meanwhile, from 82 respondents with normal nutritional status, 22 (26.8%) respondents had anemia and 60 (73.2%) respondents were not anemic. Chi square test results

obtained p value $0.004 < 0.05$, meaning that there is a relationship between nutritional status and the incidence of anemia in the working area of UPTD. Puskesmas Krui Pesisir Barat Regency in 2022. The results of OR 3,636 means that respondents with abnormal nutritional status are at risk of 3.636 times for the incidence of anemia.

Table 8

The relationship between consumption of Fe tablets and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

Consumption of Fe . Tablets	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	N	%	N	%		
Not obey	19	48.7	20	51.3	39	100	0.021	2,600 (1,147-5,896)
Obey	19	26.8	52	73.2	71	100		

Based on the table above, it is known that from 39 respondents consuming Fe tablets, 19 (48.7%) respondents experienced anemia and 20 (51.3%) respondents were not anemic. Meanwhile, from 71 respondents who consumed Fe tablets obediently, 19 (26.8%) respondents experienced anemia and 52 (73.2%) respondents were not anemic. Chi square test results obtained p value

$0.021 < 0.05$, meaning that there is a relationship between consumption of Fe tablets and the incidence of anemia in the working area of UPTD. Puskesmas Krui Pesisir Barat Regency in 2022. The OR 2,600 means that respondents who do not comply with consuming Fe tablets are at risk of 2,600 times the incidence of anemia.

Table 9

The relationship between parity and the incidence of anemia in pregnant women in the UPTD Working Area. Krui Health Center West Coast District in 2022

Parity	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	n	%	N	%	N	%		
at risk	20	71.4	8	28.6	28	100	0.000	8.889 (3,361-23,506)
No risk	18	22.0	64	78.0	82	100		

Based on the table above, it is known that from 28 respondents with parity at risk, 20 (71.4%) respondents had anemia and 8 (28.6%) respondents were not anemic. Meanwhile, from 82 respondents with parity not at risk, 18 (22.0%) respondents had anemia and 64 (78.0%) respondents were not anemic. The results of the Chi square test obtained p

value $0.000 < 0.05$, meaning that there is a parity relationship with the incidence of anemia in the UPTD working area. Puskesmas Krui, Pesisir Barat Regency in 2022. The OR result is 8.889, meaning that respondents with parity at risk have a chance of 8.889 times for the incidence of anemia.

Table 10
Relationship between pregnancy distance and the incidence of anemia in pregnant women in the Work Area UPTD. Puskesmas Krui Pesisir Barat Regency in 2022

Pregnancy Distance	Incidence of Anemia				Total		P value	OR
	Anemia		No anemia					
	N	%	N	%	N	%		
at risk	20	74.1	7	25.9	27	100	0.000	10,317
No risk	18	21.7	65	78.3	83	100		(3,770-28,233)

Based on the table above, it is known that from 27 respondents with a risky pregnancy interval, 20 (74.1%) respondents had anemia and 7 (25.9%) respondents were not anemic. Meanwhile, from 83 respondents with no risk of pregnancy spacing, 18 (21.7%) respondents had anemia and 65 (78.3%) respondents were not anemic. The results of the Chi square test obtained p value 0.000 < 0.05, meaning that there is a parity relationship with the incidence of anemia in the UPTD working area. Puskesmas Krui Pesisir Barat Regency in 2022. The results of OR 10,317 means that respondents with a distance between pregnancies at risk have 10,317 times the chance of anemia.

DISCUSSION

Univariate Analysis

Distribution of the frequency of anemia in pregnant women in the UPTD Work Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study showed that from 110 respondents, 38 (34.5%) respondents had anemia and 72 (65.5%) respondents did not have anemia.

Anemia in pregnant women is a condition in which hemoglobin levels decrease, so that the oxygen-carrying capacity for the needs of vital organs in the mother and fetus is reduced (Suhartiningsih, 2017). In addition, according to Manuaba (2014), anemia in pregnancy is the condition of the mother with hemoglobin (hb) < 11 g% in the first and third trimesters, while in the second trimester the hemoglobin level is < 10.5 g%. Factors related to the incidence of anemia in pregnant women include age, parity, pregnancy distance, nutritional status, frequency of antenatal care (ANC), economic status, knowledge, education level, culture and husband's support (Ariani, 2016).

This study is in line with research conducted by Sari et al (2021) which showed that there were 32 respondents with anemia (47.8%) and 35 respondents (52.2%).

In the opinion of researchers, anemia in pregnancy is a condition where the hemoglobin level in pregnant women is below the standard of 11 mg/dl. Anemia during pregnancy can be caused by several

factors including education, knowledge, family income, age, nutritional status, consumption of Fe tablets, parity, and distance between pregnancies.

Distribution of the education frequency of pregnant women in the UPTD Work Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 110 respondents, 32 (29.1%) respondents with low education and 78 (70.9%) respondents with higher education.

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual, religious, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and state. 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 more mature individual, group or community. The level of education can affect a person's level of knowledge because a person's ability to accept and understand something is determined by the level of education he has.

According to RI Law No. 23 of 2003, a person's level of education can support or influence the level of knowledge, namely the higher the education, the higher the knowledge of a person because high education makes it easier for mothers to receive new information so they are not indifferent to health information, while the lower the education, the knowledge is very limited. so indifferent to existing health programs. Knowledge is a collection of information that is used and obtained through a process during life and is used as a means of adjustment for oneself and the environment (Edison, 2019).

This study is in line with research conducted by Chandra et al (2019) which showed that the majority of respondents had a high education level of high school as many as 28 people (68.3%).

In the opinion of researchers, the level of education also has a relationship with the level of health. The higher the level of education, the easier

it is to accept the concept of healthy living independently, creatively and sustainably. The level of education also greatly affects the ability to receive information, determine or influence whether or not someone easily receives knowledge, the higher the education, the easier it is to receive information about health.

Frequency distribution of knowledge of pregnant women in the UPTD Work Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 110 respondents, 37 (33.6%) respondents had poor knowledge and 73 (66.4%) respondents had good knowledge.

Knowledge is a very important domain for the formation of one's actions. Knowledge is needed as support in growing self-confidence as well as attitudes and behavior every day, so it can be said that knowledge is a fact that supports one's actions. Knowledge is one of the factors that influence health behavior. Pregnant women who know and understand the consequences of anemia and how to prevent anemia will have positive behaviors and actions so that they can avoid the effects and risks of anemia during pregnancy. There is a theory that states that good knowledge will affect health behavior so that it affects health behavior (Sulistyoningsih, 2011).

Lack of knowledge about anemia has an influence on health behavior, especially in pregnant women, will result in less than optimal health behavior of pregnant women to prevent anemia in pregnancy. Pregnant women who have less knowledge about anemia can result in a lack of consumption of foods containing iron during pregnancy due to their ignorance, so that knowledge about anemia is important for pregnant women to know (Purbadewi and Ulvie, 2013).

This study is in line with research conducted by Wulandini (2018) which showed that most pregnant women had poor knowledge of 37 people (56.1%) and it was found that minority pregnant women had good knowledge of 11 people (16.7%).

In the opinion of the researcher, the knowledge possessed by a mother will influence decision making and also affect her behavior. Mothers with poor knowledge are likely to have an impact on poor maternal behavior.

Frequency distribution of family income of pregnant women in the UPTD Work Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 110 respondents, 34 (30.9%) respondents had low family

income and 76 (69.1%) respondents had high family income.

Income is the amount of real income from all household members that are donated to meet the collective and individual needs of the household. The level of family income is income or family income which is arranged from low to high. The income level of each family is different. The occurrence of these differences is influenced by many factors, including the type of work and the number of working family members (Suparyanto, 2014).

Family income that is less than the provincial minimum wage (UMP) affects the occurrence of anemia in pregnant women. The amount of income that a person receives greatly affects the types of needs that can be met. Income is closely related to the fulfillment of the necessities of life, including the fulfillment of food needs to prevent and overcome anemia in pregnancy. Thus, someone with a low income will increase the risk factors for anemia, including inadequate Fe intake, inadequate nutrition and meeting health needs such as drugs and others (Dhilon et al, 2019).

This study is in line with research conducted by Yuliansyah et al (2015) which showed that most of the respondents with low incomes were 58 respondents (85.3%).

In the opinion of researchers, income is related to a person's ability to meet needs. One of the impacts of poverty is the inability of households to meet their food needs in good quantity and quality, such as meeting the nutritional needs of pregnant women.

Frequency distribution of the age of pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study showed that from 110 respondents, 32 (29.1%) respondents were at risk and 78 (70.9%) were at risk.

Age is defined as the length of time living or existing since birth or held until now. The causes of maternal death from reproductive factors include maternal age or maternal age. In the period of healthy reproduction, it is known that the safe age for pregnancy and childbirth is 20-35 years. Maternal mortality in pregnant women and childbirth at the age of under 20 years was 2 to 5 times higher than maternal deaths that occurred at the age of 20 to 35 years. Maternal mortality increases again after 35 years and over (Prawirohardjo, 2016).

Pregnant women at an age that is too young, namely <20 years old, will easily experience food competition between the fetus and the mother who is still in the process of growth which can result in

impaired growth for the fetus due to the hormonal growth process that occurs during pregnancy. Pregnant women at a young age are also relatively not ready to pay attention to the environment needed for fetal growth, as well as growth for themselves. In developing countries, about 10-20% of babies are born to mothers in their teens (Demnoeche and Moulesshoul, 2011).

Pregnant women over the age of 35 years tend to experience anemia due to the influence of decreased iron reserves in the body due to the fertilization period. The first pregnancy in women aged over 35 years will also have a risk of complications in pregnancy and childbirth, due to a decrease in the functions of the reproductive organs (Proverawati, 2018).

This study is in accordance with research conducted by Widayati and Luvi Dian (2018) in Candirejo Village which shows that of the 23 pregnant women, the majority are in the age range of 20-35 years as many as 15 people (65.2%) and 33.3% suffer from anemia. 8 people (34.8%) and 87.5 had anemia in pregnancy with age < 20 years and > 35 years.

In the opinion of researchers, many pregnant women of no risk age but experience anemia due to other factors that can cause low hemoglobin levels, such as the behavior of mothers who do not like to consume vegetables and fruits that contain iron. In addition, maternal compliance in performing ANC is not good, and the habit of mothers who are not obedient in consuming Fe tablets. So the hope is that even though pregnant women at a non-risky age should still routinely carry out prenatal checkups, regularly eat foods that contain lots of iron, and be obedient in performing ANC.

Frequency distribution of the nutritional status of pregnant women in the UPTD Work Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 110 respondents, 28 (25.5%) respondents with abnormal nutritional status and 82 (74.5%) respondents with normal nutritional status.

Nutritional status is the state of the body as a result of food consumption and use of nutrients. Nutritional status is a picture of the balance between care and nutritional needs of a person. If the intake is appropriate then it is called good nutrition, if it is lacking it is called undernutrition and if the intake is more then it is called over nutrition (Asyirah, 2012).

Pregnancy causes an increase in energy metabolism, therefore the need for energy and other nutrients increases during pregnancy, especially the need for iron. This is because the volume of blood in

the body increases by 35%. This is equivalent to 450mg of iron for producing red blood cells. If the need for iron is not met, it will cause anemia in pregnancy (Asyirah, 2012).

This study is in line with research conducted by Oktavia (2021) which showed that most pregnant women had normal nutritional status, namely 75 respondents (69.4%), and a small proportion of pregnant women had abnormal nutritional status, namely 33 respondents (30.6%).

In the opinion of researchers, nutritional status is a balance between the amount of nutrient intake and the amount needed (by the body used for biological functions (activity, physical growth, development, health maintenance, etc.). The lower the nutritional status of pregnant women, the higher the nutritional status of pregnant women. risk of anemia The incidence of anemia is basically directly influenced by the pattern of daily food consumption.

Distribution of the frequency of consumption of Fe tablets in pregnant women in the UPTD Work Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 110 respondents it was found that 39 (35.5%) respondents did not comply with consuming Fe tablets and 71 (64.5%) respondents complied with taking Fe tablets.

Pregnant women are given iron tablets every day or at least 90 tablets during pregnancy (Kemenkes RI, 2014). The aim of the government in Indonesia to conduct an iron supplementation program is to prevent anemia in pregnancy. The iron absorbed from food is not sufficient to meet the needs of the mother and fetus, so additional iron intake is needed through iron tablets. However, the effectiveness of this program is often hampered by the compliance of pregnant women. Pregnant women who are not obedient in consuming iron tablets mean they are not able to meet the needs of iron in pregnancy. As a result, the risk of anemia in pregnancy, especially iron deficiency anemia, increases. Anemia can indirectly cause maternal death.

This study is in line with research conducted by Erwin (2017) which showed that out of 52 pregnant women who obediently took iron tablets as recommended by health workers, only 11 people (21%), while 41 people (79%).

In the opinion of researchers, pregnant women who are not obedient in consuming iron tablets mean they are not able to meet the needs of iron in pregnancy. As a result, the risk of anemia in pregnancy, especially iron deficiency anemia, increases. Anemia can indirectly cause maternal

death. Mothers with anemia are at risk for postpartum hemorrhage and giving birth to premature babies or babies with low birth weight. To increase the compliance of pregnant women, it is necessary to know in advance the factors related to the compliance of pregnant women in consuming iron tablets, one of which is knowledge.

Distribution of parity frequency of pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 110 respondents, 28 (25.5%) respondents with parity at risk and 82 (74.5%) respondents with parity at risk.

Parity is the number of children born both alive and dead, parity can be divided into primiparas are women who have given birth to a child large enough to live outside the womb, multipara are women who have given birth to more than one child, and grandmultipara are women who have give birth to five or more people and are usually more at risk of experiencing complications in pregnancy and childbirth (Prawirohardjo, 2016).

There is a tendency that the higher the number of births, the higher the incidence of anemia. One of the causes of the risk of pregnant women experiencing anemia in pregnancy is the mother who often gives birth and in subsequent pregnancies the mother does not pay attention to good nutritional intake during pregnancy. This is because during pregnancy the nutrients will be divided for the mother as well as for the fetus it contains (Arisman, 2014).

Parity affects the occurrence of anemia because during pregnancy requires additional iron to increase the number of maternal red blood cells and form fetal red blood cells. If the supply of Fe reserves is minimal, each pregnancy will deplete the body's Fe supply and eventually cause anemia in the next pregnancy.

This is in line with the results of research conducted by Amini (2018) which showed that most of the respondents were in the primiparous parity group, namely 36 people (52.9%), while the least respondents were respondents with multiparity parity, namely 32 people (47,1%).

In the opinion of researchers, parity is the number of pregnancies that produce a fetus that is able to live outside the womb. Parity > 3 is a factor in the occurrence of anemia. This is because too often pregnant can deplete the mother's body's nutrient reserves. Meanwhile, mothers with parity are not at risk but experiencing anemia can be caused by other factors such as gestational age, the incidence of KEK, education and mother's occupation.

Distribution of the frequency of pregnancy intervals among pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 110 respondents, 27 (24.5%) respondents with a risky pregnancy interval and 83 (75.5%) respondents with a non-risk pregnancy interval.

Birth spacing is the interval between two successive births of a woman. Birth spacing that tends to be short can cause several negative effects both on the health of the woman and the health of the baby she is carrying (Rifdiani, 2017).

Gestational interval is the time since the mother is pregnant until the next birth occurs. The distance between pregnancies is too close can cause anemia. One of the causes that can accelerate the occurrence of anemia in pregnant women is a short pregnancy interval. A distance of less than 2 years shows a higher proportion of maternal deaths. The distance between pregnancies that are too close causes the mother to have a short time to restore the condition of her uterus so that it can return to its previous condition. Pregnant women who are too close are at risk of anemia in pregnancy. Because pregnant women's iron reserves are restored. Finally reduced for the needs of the fetus it contains (Ramadini, 2016).

This study is in line with research conducted by Gusnidarsih (2020) with the results of 56 respondents that 29 (50%) respondents with risky pregnancy intervals and 29 (50%) respondents with non-risk pregnancy intervals.

In the opinion of researchers, pregnancy spacing that is too close can cause anemia, because the mother's condition has not recovered and the fulfillment of nutritional needs has not been optimal, it must meet the nutritional needs of the fetus being conceived. The community still has a lot of risky pregnancy intervals because there are still people who do not want to install contraception.

Bivariate Analysis

The relationship between education and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that of the 32 respondents with low education, 23 (71.9%) respondents were anemic and 9 (28.1%) were not anemic. Meanwhile, from 78 respondents with higher education, 15 (19.2%) respondents were anemic and 63 (80.8%) respondents were not anemic.

Chi square test results obtained p value 0.000 <0.05, meaning that there is a relationship between education and the incidence of anemia in the working

area of UPTD. Puskesmas Krui Pesisir Barat Regency in 2022. The results of OR = 10,733 means that respondents with low education have a risk of 10,733 times for the incidence of anemia.

Mother's education greatly influences how a person acts and looks for causes and solutions in his life. Highly educated people will usually act more rationally. Therefore, educated people will be more receptive to new ideas. Likewise, mothers who are highly educated will have their pregnancy checked regularly in order to maintain the health condition of themselves and the children in their womb (Walyani, 2015).

Education in general is all planned efforts to influence other people, both individuals and community groups so that they do what is expected by education actors. The low level of education is related to the level of understanding of iron (Fe) and awareness of the consumption of tablets (Fe) for pregnant women. The state of iron deficiency in pregnant women is largely determined by many factors, including the level of education of pregnant women. The low level of education of pregnant women will affect the acceptance of information so that knowledge about iron (Fe) is limited and has an impact on the occurrence of iron deficiency (Elisabeth, 2013).

Education greatly affects a person's ability in nutritional information. The higher the level of education (long schooling) of a person, the easier it is to accept a healthy life independently, creatively and sustainably. Therefore, the level of education has an exponential relationship to nutritional and health status (Sasono, 2021).

This study is in line with research conducted by Edison (2019) which showed the prevalence of anemia in mothers who had a low level of education reached 90.3% compared to mothers who had a higher education level of only 9.7%. Chi Square test results obtained a value of = 0.001. Thus, there is a significant relationship between the level of education and the incidence of anemia in pregnant women at the Blue Health Center, Bone Regency.

In the opinion of the researcher, the higher the education, the higher the awareness of the mother to get good nutrition so that it does not cause anemia in pregnancy. Anemic pregnant women with low education have a higher prevalence than mothers with higher education. Education is closely related to the ability to receive information related to health, especially for anemic pregnant women, such as knowledge of anemia, selection of high-iron foods and iron intake. Someone who has low education is at risk of having poor knowledge. So that it can affect the work that is less decent and generate low income.

A person with a low income can be at risk of not being able to meet the nutritional needs of his family including his pregnant wife.

The relationship between knowledge and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 37 respondents with poor knowledge, 22 (59.5%) respondents had anemia and 15 (40.5%) respondents were not anemic. Meanwhile, from 73 respondents with good knowledge, 16 (21.9%) respondents had anemia and 57 (78.1%) respondents were not anemic.

Chi square test results obtained p value 0.000 <0.05, meaning that there is a relationship between knowledge and the incidence of anemia in the working area of UPTD. Puskesmas Krui Pesisir Barat Regency in 2022. The results of OR = 5.225 means that respondents with poor knowledge are at risk of 5.225 times for the incidence of anemia.

Knowledge of pregnant women about anemia greatly affects the behavior of pregnant women. Lack of knowledge about anemia will result in less than optimal health behavior of pregnant women to prevent anemia in pregnancy. Pregnant women who have less knowledge about anemia cause pregnant women to consume less foods containing iron during pregnancy (Suhartatik et al, 2018).

According to Lawrence Green's theory in (Notoatmodjo, 2014), one's knowledge of health is one of the predisposing factors that influence one's behavior, so if pregnant women do not get information or counseling about anemia, it can affect how pregnant women avoid anemia. Knowledge is an important factor for the formation of a person's behavior, because from experience and research it is proven that behavior based on knowledge will be more lasting than behavior that is not based on knowledge. With increasing knowledge of pregnant women about anemia, it is expected that there will be changes in behavior in a direction that supports health.

Pregnant women who have good knowledge of course act well towards their health and vice versa pregnant women who have a low level of knowledge about anemia, where things that cause anemia mean a lack of understanding of the meaning of anemia, things that cause anemia, signs and symptoms of anemia, things that cause anemia -Things caused by anemia when anemia occurs (Susilowati et al, 2021).

This study showed that Teja et al (2021) showed that 2.8 percent of pregnant women who had good knowledge had anemia and 50 percent of

mothers who had less knowledge experienced anemia. Most pregnant women have good knowledge as many as 69 people with a p value of 0.001 meaning that there is a relationship with knowledge with the incidence of anemia in pregnant women.

In the opinion of the researcher, lack of knowledge about anemia has an influence on health behavior, especially when a woman is pregnant, will result in less than optimal health behavior of pregnant women to prevent anemia in pregnancy. Pregnant women who have less knowledge about anemia can result in a lack of consumption of foods containing iron during pregnancy due to their ignorance.

Relationship between family income and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 34 respondents with low family income, 19 (55.9%) respondents had anemia and 15 (44.1%) respondents were not anemic. Meanwhile, from 76 respondents with high family income, 19 (25.0%) respondents were anemic and 57 (75.0%) respondents were not anemic.

Chi square test results obtained p value 0.002 < 0.05, meaning that there is a relationship between family income and the incidence of anemia in the UPTD work area. Puskesmas Krui Pesisir Barat Regency in 2022. The result of OR = 3,800 means that respondents with low family income are at risk of 3,800 times for the incidence of anemia.

Family socioeconomic factors have an influence on the incidence of iron deficiency anemia because the family's food purchasing power depends on the amount of income earned. The higher the income, the more able the family to meet their nutritional needs. This shows that the poverty rate has an influence on anemia in pregnancy (Oktaviani, 2018).

Pregnant women with low family incomes are three times more likely to experience anemia than mothers with high family incomes. Family income is an important factor that affects the level of anemia in pregnant women because it increases several other related factors such as nutrition, education, awareness and hygienic conditions (Morsy & Alhady, 2014).

This study is in line with research conducted by Angraini et al (2019) which shows that there is an influence between family income and the incidence of anemia (p = 0.048), pregnant women who have family incomes less than the provincial minimum

wage (UMP) will be at risk of 1.1 times more likely to suffer from anemia in pregnancy (OR=1.13).

In the opinion of researchers, low family income is generally closely related to health problems faced. A person with an upper middle education level and family income will have many choices in choosing a source of iron, especially the type of heme (animal) which is the largest source of Fe for the body. Iron deficiency anemia reflects the ability of family income to be able to meet the needs in the amount and quality of nutrition which is reflected in nutritional status.

The relationship between age and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 32 respondents with age at risk, 13 (40.6%) respondents had anemia and 19 (59.4%) respondents were not anemic. Meanwhile, from 78 respondents with no risk age, 25 (32.1%) respondents had anemia and 53 (67.9%) respondents were not anemic.

The results of the Chi square test obtained p value 0.523 > 0.05, meaning that there is no relationship between age at risk and the incidence of anemia in the working area of UPTD. Puskesmas Krui West Coast District in 2022. The results of OR = 1.451 means that respondents with age at risk have a chance of 1.451 times for the incidence of anemia.

If the mother's age at the time of pregnancy is relatively young (<20 years) she will be at risk of developing anemia, this is because at that age there is still growth that requires more nutrients than the age above. If the nutrients are not met, there will be nutritional compensation between the mother and her baby (Wijianto, 2012).

The age of a woman at the time of pregnancy should not be too young and not too old, those who are less than 20 years old and more than 35 years old are at high risk for giving birth. A woman's readiness to conceive also includes physical, emotional, psychological, social and economic readiness. Adolescents are individuals aged 10-19 years. The main causes of death in women aged 15-19 years are complications of pregnancy, childbirth, and complications of miscarriage (Depkes, 2014).

Complications in teenage pregnancy (<20 years) are higher than the healthy reproductive period between 20-30 years, this situation will be even more difficult when coupled with psychological, social, and economic stress, making it easier for miscarriages to occur. Teenage pregnancies under the age of 20 have risks; often experience anemia, impaired fetal growth and development, miscarriage,

preterm or low birth weight, labor disorders, preeclampsia, and antepartum bleeding (Prawirohardjo, 2016).

Mothers under 20 years old and more than 35 years old are more susceptible to anemia caused by physical and psychological factors. Women who are pregnant at the age of less than 20 years are at risk for anemia because at this age malnutrition often occurs. This usually occurs because teenagers want an ideal body, so they encourage them to do a strict diet without paying attention to nutritional balance so that when they enter pregnancy they have less nutritional status. Meanwhile, mothers who are over 35 years of age are susceptible to decreased immune systems, resulting in pregnant women being susceptible to infection and disease (Lulu, 2012).

Pregnant women at risky age but do not experience anemia due to good maternal behavior, such as consuming Fe tablets regularly, consuming foods rich in iron, and routinely doing ANC. Iron Tablets Blood supplement tablets can avoid iron anemia and folic acid anemia. Pregnant women are recommended to consume at least 90 iron tablets during pregnancy. While the ANC visit is to produce a healthy pregnancy through physical examination, supplementation and health education for pregnant women. Regular antenatal visits result in the immediate detection of various pregnancy risk factors, one of which is anemia (Purwandari, 2016).

This is in line with Sjahriani's research (2019) which shows that most of the respondents are 35 years old, with a significant relationship between the age of pregnant women and the incidence of anemia (p 0.000) with the risk that the age of pregnant women 35 years can cause anemia incidence by 15 times.

In the opinion of the researcher, the age of less than 20 years or more than 35 years will trigger anemia, because mothers who are less than 20 years old have their reproductive organs not so ready that it will affect the nutritional supply of pregnant women. Meanwhile, pregnant women who are more than 35 years old will also have an effect on their nutritional needs due to less than optimal organ function. And have a higher risk of bleeding which will later lead to anemia.

The relationship between nutritional status and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 28 respondents with abnormal nutritional status, 16 (57.1%) respondents experienced anemia and 12 (42.9%) respondents were not anemic. Meanwhile,

from 82 respondents with normal nutritional status, 22 (26.8%) respondents had anemia and 60 (73.2%) respondents were not anemic.

Chi square test results obtained p value 0.004 < 0.05 , meaning that there is a relationship between nutritional status and the incidence of anemia in the working area of UPTD. Puskesmas Krui Pesisir Barat Regency in 2022. The results of OR 3,636 means that respondents with abnormal nutritional status are at risk of 3.636 times for the incidence of anemia.

Nutritional status is strongly influenced by food consumption and a person's health condition. One indicator of measuring nutritional status in Indonesia is to measure the Upper Arm Circumference (LILA). The LILA measurement aims to assess whether a person has Chronic Energy Deficiency (KEK) with an LILA threshold of 23.5. Pregnant women who experience CED and anemia have a greater risk of giving birth to babies with low birth weight (LBW), death during childbirth, bleeding, and difficult postpartum because of weakness (Oktavia, 2021).

In fact, pregnant women with SEZ tend to experience anemia more than those without anemia. This is due to the pattern of consumption and absorption of food that is not balanced during pregnancy. Nutrition greatly affects a person's nutritional state. If pregnant women during pregnancy do not consume balanced nutrition, both macronutrients and micronutrients, then pregnant women are at risk of experiencing nutritional disorders or chronic energy deficiency can occur which can lead to anemia (Larasati, 2018).

Pregnant women who do not have SEZ tend to be less likely to have anemia than those who have anemia. Pregnant women who are not SEZ usually maintain the supply of nutrients consumed during their pregnancy by consuming foods that contain balanced nutrition, both macronutrients and micronutrients, accompanied by the consumption of Vitamin C so that pregnant women are less likely to experience anemia. If pregnant women who do not have SEZ experience anemia, it may be due to how to maintain iron in food not accompanied by food consumption or water consumption that can help iron absorption, because caffeine consumption can inhibit iron absorption (Larasati, 2018).

This study is in line with research conducted by Mutiarasari (2019) which showed that there was a relationship between nutritional status and the incidence of anemia, where pregnant women with good nutritional status tended to be at risk of not being anemic as much as 6,500 times compared to less nutritional status.

In the opinion of researchers, nutritional status is the end result of a balance between the food consumed and the body's needs. If the nutritional intake is appropriate then it is called good nutrition, if the intake is less it is called undernutrition and if the intake is more it is called excess nutrition. The nutritional status of pregnant women is one of the factors that must be considered. Low nutritional status can cause anemia which results in low physical quality and affects reproductive efficiency. The higher a person's nutritional status, the better his physical condition, thus indirectly affecting reproductive efficiency.

The relationship between consumption of Fe tablets and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that from 39 respondents who consumed Fe tablets, 19 (48.7%) respondents experienced anemia and 20 (51.3%) respondents were not anemic. Meanwhile, from 71 respondents who consumed Fe tablets obediently, 19 (26.8%) respondents experienced anemia and 52 (73.2%) respondents were not anemic.

Chi square test results obtained p value 0.021 <0.05, meaning that there is a relationship between consumption of Fe tablets and the incidence of anemia in the working area of UPTD. Puskesmas Krui Pesisir Barat Regency in 2022. The OR 2,600 means that respondents who do not comply with consuming Fe tablets are at risk of 2,600 times the incidence of anemia.

Anemia in pregnancy is the most common anemia due to iron deficiency. This deficiency can be caused by lack of entry of iron elements with food, because of impaired absorption, impaired use, or because too much iron is released, for example in bleeding. Women who are pregnant or breastfeeding, need very high iron so it needs to be prepared as early as possible since adolescence. For pregnant women, take 1 tablet plus blood every day for at least 90 days of pregnancy and 40 days after giving birth (Maternity, 2014).

If the reserve supply is minimal, then each pregnancy will deplete the body's iron supply and eventually cause anemia in the next pregnancy. In pregnancy, relatively anemia occurs because pregnant women experience hemodilution (dilution) with an increase in volume of 30% to 40%, which peaks at 32 to 34 weeks of gestation. The number of blood cells increases by 18 to 30% and hemoglobin by about 19%. If the mother's hemoglobin before pregnancy is around 11 g% with hemodilution, it will

result in physiological pregnancy anemia, and the mother's Hb will be 9.5 to 10 g% (Manuaba 2014).

If the Fe supplement is given according to the standard of antenatal care, which is 90 tablets during pregnancy and a good diet, it will have a significant effect on the Hb status of pregnant women. In the sense that the increase in Hb levels of pregnant women increased significantly, from being anemic to being no longer anemic. So great is the effect of Fe tablets on the health of pregnant women in preventing anemia, therefore when pregnant women carry out pregnancy checks, the role of health workers, especially midwives, is needed to further improve counseling programs repeatedly for pregnant women and their closest families, such as husbands and other people. old. It is intended that there are other individuals who provide a stimulus to pregnant women to consume iron tablets regularly at least 90 tablets during pregnancy (Manuaba, 2014).

This study is in line with research conducted by Maternity (2014) which showed that there was a significant relationship between the consumption of Fe tablets and the incidence of anemia at BPS Nengah Astiti Sidorejo, East Lampung in 2013. times greater for those affected by anemia compared to respondents who consumed 90 tablets.

According to the researcher's opinion, pregnant women who consume Fe tablets obediently and non-compliantly are motivated by Hb results where pregnant women who obediently consume Fe tablets mostly have Hb levels above the standard. However, pregnant women who do not experience anemia must still comply with taking Fe tablets. There are several factors that cause mothers to disobey Fe tablets, such as mothers who do not like taking drugs, mothers often forget to take Fe tablets or mothers who deliberately do not take Fe tablets because they feel that their hemoglobin levels are normal.

The relationship between parity and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study indicate that of the 28 respondents with parity at risk, 20 (71.4%) respondents were anemic and 8 (28.6%) were not anemic. Meanwhile, from 82 respondents with parity not at risk, 18 (22.0%) respondents had anemia and 64 (78.0%) respondents were not anemic.

The results of the Chi square test obtained p value 0.000 <0.05, meaning that there is a parity relationship with the incidence of anemia in the UPTD working area. Puskesmas Krui, Pesisir Barat Regency in 2022. The OR result is 8.889, meaning

that respondents with parity at risk have a chance of 8.889 times for the incidence of anemia.

Parity is the number of live or stillbirths with a gestational age of 36 weeks and above that have been experienced by the mother. Parity 1-3 is a good parity for the health of the mother and fetus in the womb. Pregnant women with high parity have a risk of 1,454 times greater for anemia than those with low parity (Djamilus and Herlina, 2010).

Parity >3 years can increase the frequency of complications in pregnancy and childbirth, such as anemia in pregnancy can increase the risk of fetal death in the womb and bleeding before and after childbirth, is more common in anemic pregnant women and this can be fatal, because women pregnant women who are anemic cannot tolerate blood loss. The tendency is that the higher the number of births (parity), the higher the incidence of anemia (Ramadini, 2016).

This is in line with the research conducted by Fitriani (2012) which showed that there was a significant relationship between parity and the incidence of anemia at the Kinali West Pasaman Health Center in 2012. The results of this study are also in line with Suryani's (2014) research on factors related to the incidence of anemia. , showed that there was a significant relationship between parity and the incidence of anemia at the Air Cold Padang Public Health Center in 2014.

Supported by Jasmi's research (2016) which shows that of 145 pregnant women who have high risk parity of anemia as many as 47 pregnant women (87%). Meanwhile, 30 pregnant women with low risk parity experienced fewer anemia as many as 30 pregnant women (32.9%). The results of statistical tests using chi square obtained a value of $p = 0.000$ ($p < 0.05$) which means that there is a relationship between parity and the incidence of anemia in pregnant women, with an OR value of 13,652 which means that parity pregnant women who are at high risk are 13 times more likely to experience anemia compared to pregnant women with low risk parity.

In the opinion of researchers, anemia can occur in mothers with high parity related to the mother's biological condition and iron intake. Parity is more at risk when associated with short gestation intervals. Anemia in this case will be related to previous pregnancies where if the iron reserves in the body are reduced then pregnancy will deplete iron supplies in the body and will cause anemia in subsequent pregnancies.

Relationship between pregnancy distance and the incidence of anemia in pregnant women in the UPTD

Working Area. Puskesmas Krui Pesisir Barat Regency in 2022

The results of this study showed that from 27 respondents with a risky pregnancy interval, 20 (74.1%) respondents had anemia and 7 (25.9%) respondents were not anemic. Meanwhile, from 83 respondents with no risk of pregnancy spacing, 18 (21.7%) respondents had anemia and 65 (78.3%) respondents were not anemic.

The results of the Chi square test obtained p value $0.000 < 0.05$, meaning that there is a relationship between pregnancy distance and the incidence of anemia in the UPTD work area. Puskesmas Krui Pesisir Barat Regency in 2022. The results of OR 10,317 means that respondents with a distance between pregnancies at risk have 10,317 times the chance of anemia.

Birth spacing is too close can cause anemia. One of the factors that can accelerate the occurrence of anemia in pregnant women is a short birth interval, because the mother's condition has not yet recovered and the fulfillment of nutritional needs is not optimal, but she must meet the nutritional needs of the fetus she contains (Prawirohardjo, 2016).

The results of this study are in line with Tanziah's research (2016) which states that pregnant women who have a pregnancy interval of less than 2 years have a 2.3 times risk of developing anemia. It is very important to pay attention to the distance between pregnancies, because the distance between pregnancies of less than 2 years can accelerate the occurrence of anemia in pregnant women. Supported by research conducted by Gusnidarsih (2020) which shows that there is a relationship between maternal distance from pregnancy and the incidence of clinical anemia during pregnancy in the Talang Randai Health Center Work Area, South Bengkulu Regency.

In the opinion of researchers, a good pregnancy interval of at least 2 years is important to note so that the mother's body is ready to accept the fetus again without having to produce iron reserves. After the postpartum period, the period after it is done. Physiologically, the condition of the female reproductive organs has recovered. But it all comes back to physical and psychological readiness, especially on the part of women. In addition, a distance that is too close will cause the quality of the fetus or child to be low and the mother not getting the opportunity to improve her own body. If maternal nutritional intake is not met, it can affect SEZ in pregnant women and cause anemia.

CONCLUSION

There is a relationship between knowledge, family income, age, nutritional status, parity, consumption of Fe tablets, the distance of pregnancy and the incidence of anemia in pregnant women in the UPTD Working Area. Puskesmas Krui Pesisir Barat Regency in 2022 with a p value of 0.000

SUGGESTION

It is expected that pregnant women can routinely attend classes for pregnant women in order to add insight for pregnant women about complications during pregnancy, one of which is anemia. In addition, pregnant women are expected to be more obedient in consuming Fe tablets as an effort to prevent the incidence of anemia. further researchers will be able to examine other variables that are more varied and include broader research with different research methods, especially those related to the incidence of anemia in pregnant women so that research can continue to be developed.

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THE INFLUENCE OF LEAFLET MEDIA ON INCREASING MOTHERS' KNOWLEDGE AND ATTITUDES TOWARDS TODDLER VISITS AT INTEGRATED HEALTHCARE CENTER

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ABSTRAK: PENGARUH MEDIA LEAFLET TERHADAP PENINGKATAN PENGETAHUAN DAN SIKAP IBU TERHADAP KUNJUNGAN BALITA DI POSYANDU

Latar belakang : Posyandu merupakan salah satu upaya untuk meningkatkan taraf kesehatan di Indonesia, karena dalam kegiatan posyandu status gizi anak dapat diketahui sejak dini dan anak dapat memperoleh pelayanan kesehatan secara gratis, akan tetapi permasalahan kunjungan balita ke Posyandu masih jauh dari Standar Pelayanan minimal yaitu sebesar 90%.

Tujuan penelitian yaitu untuk mengetahui pengaruh media leaflet terhadap peningkatan pengetahuan dan sikap orangtua balita ke posyandu di Lingkungan Jempong Baru Wilayah Kerja Puskesmas Karang Pule.

Metode Penelitian : menggunakan quasi eksperiment dengan pendekatan pretest-posttest control group design. Populasi dalam penelitian ini adalah seluruh ibu balita di Lingkungan Jempong Baru sejumlah 873 responden. Jumlah sampel sebanyak 32 responden diambil secara purposive sampling. Instrument yang digunakan dalam penelitian ini adalah kuesioner. Data yang diperoleh diolah dengan menggunakan uji Man Whitney.

Hasil Penelitian rata-rata peningkatan pengetahuan pada kelompok intervensi sebesar 1,94 sedangkan peningkatan rata-rata sikap orangtua balita didapatkan 5,25 dan didapatkan , $p = 0,000$ ($p < 0,005$) baik pengetahuan maupun sikap orangtua yang artinya pemberian media leaflet berpengaruh terhadap peningkatan pengetahuan dan sikap orang tua balita.

Kesimpulan : penggunaan media leaflet dapat digunakan sebagai sarana untuk meningkatkan pengetahuan dan sikap orangtua balita ke posyandu sehingga diharapkan dengan adanya peningkatan tersebut cakupan dapat memenuhi target.

Saran: diharapkan kepada pihak Puskesmas Karang Pule agar media edukasi ini dapat dijadikan sarana informasi kepada masyarakat.

Kata Kunci :Media Edukasi, Leaflet, Pengetahuan, Sikap, Orangtua, Balita, Posyandu

ABSTRACT

Background: Integrated Healthcare Center is one of the efforts to improve the level of health in Indonesia because children can know activities and the nutritional status of children from an early age, children can get free health services, children can understand the nutritional status of children from an early age, and children can get free health services, but the problem of visiting toddlers to Integrated Healthcare Center is still far from the minimum service standard of 90%. The purpose of the study was to determine the influence of leaflet media on increasing the knowledge and attitudes of parents of toddlers to the Integrated Healthcare Center in the Jempong Baru Environment of the Karang Pule Health Center Working Area.

Research Methods: using quasi-experimental with a pretest-posttest control group design approach. The population in this study was all mothers of toddlers in the Jempong Public Health Center area, with a total of 873 respondents. The total sample of 32 respondents was taken by purposive sampling. The instrument used in this study was a questionnaire. The data obtained were processed using Man Whitney. Test.

The study's results averaged an increase in knowledge in the intervention group of 1.94. In contrast, the average increase in the attitudes of parents of toddlers was obtained at 5.25 and acquired, $p = 0.000$ ($p < 0.005$) both knowledge and parental attitudes, which means that the provision of leaflet media affects the increase in knowledge and attitudes of parents under five.

Conclusion: the use of leaflet media can improve the knowledge and attitudes of parents of toddlers to Integrated Healthcare Center so that the coverage can meet the target with this increase.

Suggestion: it is hoped that the Karang Pule Health Center so that this educational media can be used as a means of information to the public.

Keywords : Educational Media, Leaflet, Knowledge, Attitude, Parents, Toddlers, Integrated Healthcare Center

INTRODUCTION

One form of public health efforts in the context of organizing development by empowering the community to obtain essential health services significantly accelerates the reduction of maternal and toddler mortality, namely through the Integrated Service Post (Posyandu) (Lahmadi, Multazam, and Kurnaesih 2021; Sintiawati, Suherman, and Saridah 2021). Posyandu has a crucial role as a health provider with a form of approach, namely community participation in the health sector which is carried out by a cadre trained from the Community Health Center (Puskesmas). The activities carried out in the posyandu are registration, weighing, and recording maternal and child services in the Maternal and Child Health book (MCH Book) (Sugeng, Tarigan, and Sari 2019).

In reducing the mortality rate of toddlers, one of the ways taken by the government is by early detection (Surveillance covered) with monitoring activities carried out at posyandu to carry out immunization and weighing immunization to make the body immune to certain diseases. The effectiveness of vaccination depends on the factors that affect it so that children can expect immunity in children (Atik and Susanti 2020). The role of Posyandu in general as implementers, managers, and users. In understanding the role and duties of the government, has provided a technical reference book on the use of the MCH book. Posyandu officers carry out activities such as early detection of growth of the toddler's weight weighed for follow-up if they find growth problems, namely by providing additional food, how to prevent diarrhea in toddlers, how to make ORS, monitoring and counseling the health of children under five. Monitoring the development of toddlers is also carried out at the Posyandu; if developmental disorders are found, children will give way to stimulate the growth of children, and the findings will be reported to health workers to be forwarded to the Puskesmas officers (Kristania and Yulianti 2019; Poltekkes Kemenkes Malang 2019).

The results of the Basic Health Research (Riskesdas) in 2013 reported that the number of parents of toddlers to posyandu to monitor the growth of children aged 6-59 months in the last six months in NTB was still low. In 2013 for visits more than four times ($> 4x$), as much as 44.6%, 21.1% as much as 1-3 times as much as 21.1%, and never as much as

34.3%. This condition also decreased compared to 2010, namely 45.4% with a frequency of visits more than four times ($> 4x$), 29.1% as much as 1-3 Cali, and 25.5% never been to posyandu (Badan Penelitian dan Pengembangan Kesehatan 2013).

It was reported that the number of parents of toddlers to posyandu in 2016 in the Karang Pule Health Center area was the lowest at 4323 and the weighted at 3711. Judging from the number of Bawah Garis Merah, the Karang Pule Health Center is the highest in the last three years. In 2016, as many as 178 experienced a decrease from the previous years, namely 2015, as many as 183 people, and 2014 as many as 171 people. The visit of parents of toddlers shows that the higher the age of toddlers, the higher the percentage of toddlers who have never been weighed at posyandu. Therefore, 5-year-olds should still be taken to posyandu monthly (Pusdatin Kemenkes RI 2018). Some of the impacts experienced by toddlers if the toddler's mother is not active in posyandu activities include not getting health counseling about the expected growth of toddlers. Not getting vitamin A for eye health, toddler mothers do not know the toddler's weight growth every month, toddler mothers are not active in posyandu activities, and toddler mothers cannot monitor the growth and development of toddlers (Pusdatin Kemenkes RI 2018).

One of the problems in implementing the Posyandu program in Indonesia is the need for more public knowledge about the benefits of posyandu (Aminuddin, Zulkifli, and Djafar 2011). Several previous studies have reported a significant relationship between the ability of mothers of toddlers and the level of participation in posyandu activities (Ambarita, Husna, and Sitorus 2019; Rehing, Suryoputro, and Adi 2021). Hasil research conducted by (Atik and Susanti 2020) Reporting based on the non-parametric test, the Spearman Rank correlation was found to have a significant relationship between the level of knowledge of toddler mothers and the behavior of toddler visits to posyandu with a p value of 0.000 (< 0.05). With the results of previous studies, researchers assume that the more an individual's education is, the easier it is to receive information. In the end, the knowledge possessed will be better. Likewise, low education will hinder the development of attitudes. Learning is one of the factors that influence the formation of a person's

perspective. Mother's knowledge influences the mother's behavior to participate in a visit to the posyandu with her child because if someone has good knowledge, they will also have good behavior (Rahmandiani et al. 2019; Rohmah, Murniati, and Safitri 2020).

Increasing knowledge will be better if you use more than one media, one of which is leaflet media (Pusparina, Maria, and Anggraini 2019). Leaflet media is a practical media in the form of collapsible sheets presented for the delivery of information or the delivery of health messages that leaflets can give to parents (Sirvana, Sabur, and Umar 2021). The booklet will explain and bring changes and attitudes of toddler parents to bring toddlers to toddlers. The research results show that using leaflets and poster media in reproductive health education effectively increases knowledge in children, adolescents, and parents, with a p-value significance value of $0.00 < 0.05$ (Tedju Hinga 2019). Then the research conducted by (Hannanti, Ibnu Malkan Bakhrul Ilmi, and Muh. Nur Hasan Syah 2021) reported that there was a difference in respondents' knowledge about the influence of nutrition education using comic media ($p = 0.000$) and leaflets ($p = 0.000$) with alpha 0.05 which means there is the effect of nutrition education using comics and leaflets on anemia knowledge in young women of SMA Negeri 14 Jakarta.

Seeing the description of the problem above, it is necessary to conduct research aimed at determining the influence of leaflet media on the knowledge and attitudes of mothers towards toddler visits at posyandu. Although the novelty of this study is that leaflet media is still rarely used as an educational media at Posyandu, which is located in the work area of the Karang Pule Health Center, then

the characteristics of the area and samples are different from previous studies.

METHOD

This research is a Quasi Experiment with a pretest-posttest control group design approach. The study was conducted by providing a pretest before the intervention and will be reassessed through a post-test after the intervention. This research was conducted from March 24-April 7, 2018, at the Karangpule Health Center. The sample was parents of toddlers who met the inclusion criteria, namely toddlers aged 0-59 years, who were in the New Jempong Environment and had Kartu Menuju Sehat (KMS). The sample used was a sample of at least 32 respondents divided into two groups: the intervention group of 16 mothers providing counseling using leaflets and the control group of 16 mothers providing counseling without using leaflets. Researchers used a meaningfulness level of $p = 0.05$ and a confidence interval (95%).

The instrument in this study is a questionnaire sheet consisting of 10 questions in the form of right and wrong choices and ten questions in the form of multiple options. 0 (zero) is given for not answering the question and 1 (one) for the question answered correctly. So that the total obtained is 20 for all questions answered correctly.) to measure the knowledge that has been tested for US validity and reliability before being shared with respondents, data analysis using This study will use Shapiro-Wilk to test normality, abnormally distributed data results, so that data analyzed / statistical test using the Mann Whitney test to find out whether there is an influence of leaflet media intervention on increasing the knowledge and attitudes of parents of toddlers to posyandu in the New Jempong Environment of the Karang Pule Health Center work area.

RESEARCH RESULTS

Table 1
Respondent Frequency Distribution

Variable	Intervention (Leaflet)		Control (No Leaflet)		Total	
	n	%	n	%	n	%
Age						
< 30 tahun	14	87,5	8	50	22	69
> 30 Tahun	2	12,5	8	50	10	31
Education						
Low	4	25	9	56	13	41
Intermediate	10	63	7	44	17	53
Tall	2	12			2	6
Work						
House Wife	10	62	13	81	23	72
Self Employed	2	13	3	19	5	15

Private	4	25	4	13
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Based on the results of Table 1 of the distribution of respondents according to maternal age from 32 respondents interviewed in the control group and intervention group, the majority aged <30 years, as many as 14 mothers (87.5%) in the intervention group and eight mothers (50%) in the control group. Meanwhile, the distribution of maternal education in the intervention group was based on education level, the majority of respondents had secondary education

of 10 mothers (63%), and in the control group, the majority had low education of 9 mothers (56%). And the distribution according to the maternal occupation of 32 respondents of employment status in the intervention group, namely the majority of House Wife (IRT), as many as ten mothers (62%) in the control group, as many as 13 mothers (81%) worked as Housewife.

Table 2
Average Increase in Knowledge and Attitudes of Toddler mothers in Control Groups and Intervention Groups

Group	n	Mean	Std. Devices	Median	
				Max	Min
Intervention					
Pre knowledge	16	1.94	0.998	3	0
Post Knowledge					
Control					
Pre knowledge	16	0.31	0.602	1	-1
Post Knowledge					
Intervention					
Pre Attitude	16	5.25	3.276	9	1
Post Attitude					
Control					
Pre Attitude	16	0.87	1.928	4	-2
Post Attitude					

Based on table 3, the average increase in knowledge of toddler mothers in the intervention group with 16 respondents, the results of the analysis was obtained with the average value of knowledge increase was 1.94, the highest value of knowledge improvement was 3, the lowest value of knowledge improvement was 0, and the standard deviation was 0.998, compared to the control group The highest value of knowledge improvement is 1, the lowest value of knowledge improvement is -1 with the average value of knowledge increase is 0.31 and the standard deviation is 0.602. mother obtained the average gain in attitudes of toddler mothers in the intervention group with 16 respondents from the analysis results with an average value of attitude improvement was 5.25, the highest value of attitude improvement was 9, the lowest value of attitude improvement was -1, and the standard deviation was 3.276. In contrast, in the control group, the analysis results were obtained with an average value of attitude improvement was 0.87, the highest value of

attitude improvement was 4, The lowest value of attitude improvement was -2, and a standard deviation is 1.928.

Based on table 2 above, it can be seen that from Man Whitney's statistical test, it was obtained that the mean rank of parental knowledge of toddlers in the intervention group was 22.44, while the understanding of toddler mothers in the control group was 10.56, while the mean level of parental attitudes of toddlers in the intervention group was 23.94. In contrast, maternal attitudes were toddlers in the control group was 9.06. Therefore, the statistical test results on both obtained a p-value of 0.00 < p-value of 0.05. Therefore, the results rejected Ho, but Ha was accepted, which means that there is an influence of counseling on increasing the knowledge of toddler mothers and the attitude of toddler mothers about posyandu between the control group that was given counseling without leaflet media and the intervention group that was given counseling with leaflet media.

Table 3
The Effect of Media Leaflets on The Knowledge and Attitudes of Toddler Mothers on Keomopok Control and Intervention

Group	Mean	Std. Devices	Confidence Interval 95%		Mean Rank	Nilai p
			Lower	Upper		
Intervention						
Pre knowledge	5.38	1.708	4.46	6.29	22.4	0.000*
Post Knowledge	7.31	1.448	6.54	8.08		
Control						
Pre knowledge	5.25	1.807	4.29	6.21	10.56	
Post Knowledge	5.56	1.590	4.72	6.41		
Intervention						
Pre Attitude	28.31	1.778	27.36	29.26	23.94	0.000*
Post Attitude	35.81	3.655	33.86	37.76		
Control						
Pre Attitude	28.06	1.482	27.27	28.85	9.06	
Post Attitude	28.94	1.611	28.08	29.80		

*Uji Man Whitney

DISCUSSION

The Influence of Media Leaflets on The Knowledge of Toddler Mothers

Knowledge is the result of knowing that occurs in a person who performs sensing of an object through the senses of sight, hearing, smell, taste, and taste. The majority of that knowledge. It is obtained through the eyes and ears (Jaji 2020; Ramadhanti, Adespin, and Julianti 2019). Leaflet media is a practical and effective learning media because it is easy to understand readers with its functional and simple form so that it is easy to go anywhere because it is only a sheet containing information or writings and images that interest readers (Andan Firmansyah, Ahmed Jahidin, and Nur Isriani Najamuddin 2019; Bingen 2019; Pristya and Amalia 2021).

The results showed the results of the pretest conducted on 16 respondents of the intervention group on toddler mothers simultaneously; then, a post-test was carried out 2 weeks after the pretest. The research data analysis found that the average value of increasing knowledge was 1.94, the highest value of knowledge improvement was 3, the lowest value of knowledge improvement was 0, and the standard deviation was 0.998. Meanwhile, in the control group, respondents carried out 16 control group respondents the toddler mother simultaneously, then a post-test was carried out two weeks after the pretest. The research data analysis found that the average value of knowledge increase was 0.31, the highest value of knowledge

improvement was 1, the lowest value of knowledge improvement was -1, and the standard deviation was 0.602. In this intervention group's pretest and post-test results, there was a relatively high increase in knowledge and a reasonably high average value of changes in knowledge levels, so there was a significant difference between the pretest and post-test. The pretest results showed that there was still a lack of knowledge of parents of toddlers about posyandu, the researcher's assumption was due to the lack of information provided by the posyandu or due to other factors, and the post-test results showed a fairly high increase in values after respondents were given counseling with leaflet media. The results of the statistical test using Man Whitney obtained a p-value of $0.00 < \alpha$ of 0.05, then results rejected H_0 , and H_a was accepted, which means that counseling has an influence on increasing the knowledge of toddler mothers.

This study's results align with the research conducted (Andan Firmansyah, Ahid Jahidin, and Nur Isriani Najamuddin 2019). It was reported that there was a difference in influence between the regional language leaflet group and regional language videos, where the P value = $0.000 \leq \alpha$ = 0.05, it was known that the mean after counseling using regional language leaflet media was 1.98 while the mean value after counseling regional language video media was 2.32 which means that both uses of regional language leaflet media and regional language videos are equally effective in increasing adolescent knowledge about the dangers of

smoking. Then the research conducted by (Sugiarti, Lindayani, and Mahayati 2020) Regarding the benefits of counseling with media leaflets reported that the median value of knowledge before being given health education is 65, while the median value after being given health education is 95, which means that counseling using leaflet media can increase knowledge. Correspondingly the research conducted by (Masteryagung, Yulia RT, and Noriani 2019) reported a significant influence between giving leaflets on pregnant women's ability to IMD and the strength of a fairly strong relationship, namely a p-value of 0.002.

From the results of the research above, knowledge can increase with the existence of information using various kinds of media, namely print media and electronic media. The print media include posters, leaflets, brochures, magazines, newspapers, stickers, and pamphlets, while electronic media, for example, television, radio and tape recorders, vcd, and video. Leaflets convey health information through folded sheets, the contents of which are in the form of sentences, pictures, or combinations. Leaflets can adjust and learn independently, provide detailed information, and are easy to create, reproduce and revise (Fauziah, Maesaroh, and Sulistyorini 2017; Kusmaryati 2019).

The leaflet of one of the props arranged on the principle of human knowledge is captured through the five senses. A good booklet uses simple language, easy to understand by the reader; the title selection must be interesting to read and combine writing and images, and the material selection must follow the intended target. Leaflets can be widespread and are one of the valuable ways to convey information to women and their families or support the information they receive (Kasman, Noorhidayah, and Persada, 2017; Prawesthi et al. 2021). The advantage of using this media is that the target can adjust and learn independently and practically because it reduces the need to take notes, the target can see the content when relaxed and very economical, and various information can be provided or read by members of the target group, so that leaflet can discuss it, can provide detailed information which is not given orally, is easy to make, reproduce and improve and is easily adjusted to the target group

The Influence of Media Leaflets on the Attitude of Toddler Mothers

The results of the study related to the influence of leaflet media on the attitudes of toddler mothers were obtained in the pretest conducted by

16 respondents of the intervention group on parents of toddlers simultaneously. Then a post-test was carried out 2 weeks after the pretest. The research data analysis found that the average value of attitude improvement was 5.25, the highest value of attitude improvement was 9, the lowest value of attitude improvement was -1, and the standard deviation was 3.276. At the same time, the control group in parents of toddlers simultaneously, then a post-test was carried out two weeks after the pretest. From the results of the analysis of research data, it was found that the average value of attitude improvement was 0.87, the highest value of attitude improvement was 4, the lowest value of attitude improvement was -2 and the standard deviation was 1.928. The results of the statistical test using Man Whitney obtained a p-value of $0.00 < a$ p-value of 0.05, then the result rejected H_0 , and H_a was accepted, which means that counseling influences the attitude of toddler mothers.

In the pretest and post-test results in this control group, there was an increase in attitudes that were not too high, and the average value of changes in attitude levels was not too high, so there was a not too significant difference between the pretest and post-test. The pretest results show that there still needs to be more attitude of parents of toddlers toward posyandu; this is due to the lack of information provided by the posyandu or due to other factors. The post-test results showed a high increase in value after respondents were given counseling with leaflet media.

The results of this study are in line with the research conducted by (Purimahua et al. 2022) reported there is the effect of leaflet media use on attitudes with the average attitude value of respondents before getting counseling is 72.85 and after giving counseling through leaflet media is 97.46 which means there is an increase in the average value before and after providing leaflets. Furthermore, the results of hypothesis testing using the Wilcoxon test obtained a z-score value of 4,793 with a p-value of $0.000 < 0.005$, which means that there is an effective use of leaflet media toward traders' attitudes about Covid-19 (Purimahua et al. 2022). Furthermore, the research conducted by (Enindelastris, Sety, and Kusnan 2021) reported there are differences in knowledge, attitudes, and behavior of leaflet and audiovisual media groups, knowledge Asymp sig (2-tailed) = 0.015, attitude Asymp sig (2-tailed) = 0.000. influence of the level of knowledge of attitudes and behaviors of students of SMAN 14 Bombana about Covid 19. Correspondingly the research conducted by (Sumiati 2018) shows that there is an impact of health promotion by using leaflet

media on the knowledge and actions of new families in achieving quality families.

Attitude is a person's fast response to the stimulus of an object whose results cannot be seen immediately but can only be directly interpreted in advance from a closed behavior. The attitude shows the suitability of the reaction to the stimulus, which is an emotional reaction to the social motivation. An attitude is a readiness or willingness to act and is not an exercise of a particular motive (Matdoan and Dolang 2020; Mustofa et al. 2021). Attitudes can be obtained through experiences that will have a direct influence on behavior. Such an immediate effect can be in the form of behavior that will be realized only when conditions and situations permit. In this interaction, the individual forms a specific pattern of attitude towards the object facing him (Handayani and Sari 2021; Herman et al. 2021)

From the results of research related to the influence of leaflet media on the knowledge and attitudes of toddler mothers, these two variables are significantly related because the existence of good knowledge can form reasonable beliefs. For example, a person's trust can influence a person's attitude to behavior. Such ideas will affect a person's perspective on whether the behavior produces something desirable or undesirable. Furthermore, beliefs of a normative nature and the motivation to act according to expectations form subjective norms in the individual. In addition, behavioral controls are determined by past experiences and individual estimates of how difficult or easy it is to perform certain behaviors. Therefore, it is necessary to increase knowledge as a beginning in shaping the behavior of toddler mothers to bring their children to visit posyandu. Because with good knowledge related to Posyandu, the mother's attitude will also improve so that the target of achieving toddler visits can be achieved.

CONCLUSION

The leaflet media can be used to improve the knowledge and attitudes of parents of toddlers to posyandu, so with this increase, the coverage can meet the target.

SUGGESTION

It is hoped that the Karang Pule Health Center can be used as a means of information to the public and create other educational media that can be interested in attracting toddler mothers.

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THE RELATIONSHIP OF COMPLEMENTARY FEEDING (MP-ASI) AND EXCLUSIVE BREAST MILK WITH NUTRITIONAL STATUS IN TODDLERS

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ABSTRAK : HUBUNGAN MP-ASI DAN ASI EKSKLUSIF DENGAN STATUS GIZI PADA BALITA

Latar Belakang Berdasarkan laporan dari Riskesdas tahun 2018, prevalensi status gizi menurut (BB/U) pada anak umur 0-23 bulan (Baduta), daftar status gizi di Indonesia yaitu 3,8% mengalami gizi buruk, 11,4% mengalami gizi kurang, 82% mengalami gizi baik dan 2,7 % mengalami gizi lebih. Tujuan diketahui hubungan MP-ASI serta riwayat ASI eksklusif dengan status gizi pada balita 12-59 bulan di Wilayah Kerja Posyandu Melati Desa Candimas Tahun 2022.

Metode Jenis penelitian menggunakan kuantitatif, desain *Survei Analitik* dengan pendekatan *cross sectional*. Sampel dalam penelitian ini adalah responden usia 12-59 bulan sebanyak 415 anak dengan menggunakan rumus slovin didapat 204 responden. Teknik sampling *purposive sampling*. Analisa data univariat dan bivariat menggunakan uji *chi square*.

Hasil Pemberian MP-ASI dengan kategori tidak MP-ASI dini sebanyak 165 ibu (80,9%). ASI Eksklusif dengan kategori ASI Eksklusif sebanyak 156 balita (48,5%). Status gizi balita usia 12-59 bulan dengan kategori status gizi baik sebanyak 145 responden (71,1%). Hasil analisa menggunakan *chi-square*, didapat ($P\text{-Value}=0,000 < \alpha 0,05$) maka dapat disimpulkan terdapat hubungan pemberian MP-ASI dengan status gizi pada balita 12-59 bulan di Wilayah Kerja Posyandu Melati Desa Candimas Tahun 2022. Hasil analisa menggunakan *chi-square*.

Kesimpulan terdapat hubungan pemberian MP-ASI dengan status gizi pada balita 12-59 bulan di Wilayah Kerja Posyandu Melati Desa Candimas Tahun 2022. Memberikan ASI eksklusif dan MP-ASI yang tepat usia dan kebutuhan untuk mendukung tumbuh kembang dan tercapainya status gizi baik pada bayi.

Saran Meningkatkan upaya pencegahan terhadap kejadian penyakit infeksi dengan menjaga kebersihan diri dan lingkungan sekitar bayi.

Kata Kunci : ASI Eksklusif MP-ASI, ,Balita ,Status gizi

ABSTRACT

Background Based on a report from Riskesdas 2018, the prevalence of nutritional status according to (BB/U) in children aged 0-23 months (Baduta), the list of nutritional status in Indonesia is 3.8% experiencing malnutrition, 11.4% experiencing malnutrition, 82 % experienced good nutrition and 2.7% experienced excess nutrition. Purpose:

The Purpose to know the relationship between MP-ASI and a history of exclusive breastfeeding with nutritional status in toddlers 12-59 months in the Melati Posyandu Work Area Candimas Village in 2022.

Method This type of research uses quantitative, analytical survey design with a cross sectional approach. The sample in this study were respondents aged 12-59 months as many as 415 children using the Slovin formula obtained 204 respondents. The sampling technique is purposive sampling. Analysis of univariate and bivariate data using chi square test.

Results The provision of MP-ASI with the category of not early MP-ASI was 165 mothers (80.9%). Exclusive breastfeeding with exclusive breastfeeding category was 156 toddlers (48.5%). Nutritional status of children aged 12-59 months with good nutritional status category as many as 145 respondents (71.1%). The results of the analysis using chi-square, obtained ($P\text{-Value} = 0.000 < \alpha 0.05$) it can be concluded that there is a relationship between complementary feeding and nutritional status in toddlers 12-59 months in the Work Area of Posyandu Melati Candimas Village in 2022. The results of the analysis used chi-square, obtained ($P\text{-Value} = 0.000 < 0.05$) it can be concluded that there is a relationship between complementary feeding and nutritional status in children under five years of age 12-59 months in the Working Area of Posyandu Melati Candimas Village in 2022. Conclusion: Exclusive breastfeeding and complementary feeding - Breast milk that is appropriate for age and needs to support growth and development and achieve good nutritional status in infants.

Suggestion Increase prevention efforts against the incidence of infectious diseases by maintaining personal hygiene and the environment around the baby.

Keywords : Exclusive Breastfeeding MP-ASI, Nutritional Status, Toddler

INTRODUCTION

Provision of balanced nutrition can affect the nutritional status of children, especially during the first two years of life. Lack of fulfillment of nutrients during this period, will cause permanent growth and development disorders. Exclusive breastfeeding, inappropriate complementary feeding and the incidence of infectious diseases affect nutritional status. (Nuril Aiffa D, 2017)

Based on a report from Riskerdas in 2018, the prevalence of nutritional status according to (BB/U) in children aged 0-23 months (Baduta), the list of nutritional status in Indonesia is 3.8% experiencing malnutrition, 11.4% experiencing malnutrition, 82 % experienced good nutrition and 2.7% experienced excess nutrition. (Rikerdas National Report 2018)

The World Health Organization or the World Health Organization (WHO) recommends that newborns receive exclusive breastfeeding (without additional food) for 6 months. One of the reasons is because breast milk contains balanced nutrition. (Irwana Anasta Putra, Rizky AR, 2014)

Breast milk is of superior nutritional value. The composition of nutrients contained in breast milk is very precise and ideal for child growth and development. Exclusive breastfeeding is breastfeeding without other additional food and drink until the age of 6 months. Non-exclusive breastfeeding is breastfeeding with food or other additional drinks before the age of 6 months. According to WHO, infants are recommended to be exclusively breastfed until the age of 6 months. After the first 6 months, breastfeeding is continued along with complementary feeding to complement breast milk nutrition until the baby is 2 years old. (Cika Irlia Azzahra, 2013)

The benefits of exclusive breastfeeding for infants include complete nutrition, increase endurance, increase mental and emotional intelligence that is stable and spiritually mature followed by good social development, is easy to digest and absorb, has a composition of fat, carbohydrates, calories, protein and vitamins, protection from infectious diseases, allergy protection because breast milk contains antibodies, provides intelligence and nerve stimulation, improves health and intelligence optimally (Mufdlilah, 2017).

Exclusive breastfeeding in Indonesia is still far from expectations. Nationally, the coverage of infants receiving exclusive breastfeeding in 2017 was 61.33%. However, this figure has not reached the

target of exclusive breastfeeding coverage set by the government, which is 80% (Kemenkes, 2018). This is due to the lack of public knowledge about the importance of exclusive breastfeeding, babies who have been given additional food before the age of 6 months and the lack of nutrition from breastfeeding mothers so that milk production decreases.

Infants who must be given only breast milk are newborns up to the age of 6 months, without being given other additional food, however, after the baby is 6 months old, babies need to be given additional food other than breast milk. Another factor that causes stunting is the provision of supplementary food that is not strong, in this case the provision of complementary feeding (MP-ASI). MP-ASI given late can cause the baby to experience iron deficiency due to not getting enough nutrients. The inhibition of growth in children due to a lack of iron intake during the toddler period if it lasts for a long time will result in stunting, it is necessary to pay attention to the provision of complementary feeding so that toddler nutrition is fulfilled (Hanum, 2019).

From the results of Zulmi's research (2019) cThe Relationship Between Exclusive Breastfeeding and the Nutritional Status of Toddlers in the Working Area of the Warung Gunung Public Health Center in 2018. The results of the univariate analysis showed that under-fives who were malnourished and undernourished were used as a case sample of 20 (33.33%) toddlers and those who had good nutrition were made the control group. as many as 40 (66.67%) toddlers, almost half (38.33%) toddlers are not given exclusive breastfeeding. The results of the bivariate analysis showed that there was a relationship between a history of exclusive breastfeeding and the nutritional status of children under five (pvalue = 0.00) OR = 8.04..

METHODS

This type of research uses quantitative, analytical survey design with a cross sectional approach. The sample in this study were respondents aged 12-59 months as many as 415 children using the Slovin formula obtained 204 respondents. The sampling technique is purposive sampling. Complementary breastfeeding and exclusive breastfeeding use secondary data taken from the Buku KIA, while the nutritional status of toddlers is measured by height compared to age. Analysis of univariate and bivariate data using chi square test.

RESULTS

Characteristics of Respondents

Table 1

Characteristics	F	%
Age		
At risk<20 and>35 yrs	27	13.2
No Risk 20-35 yrs	177	86.8
Education		
D3	11	5.4
S1	11	5.4
Senior High School	144	70.6
Junior High School	38	18.6
Work		
Laborer	44	21.6
IRT	96	47.1
Employee	2	1.0
civil servant	19	9.3
Self-employed	43	21.1

Based on table 1 above, it can be concluded that the characteristics of mothers based on the highest percentage of age are not at risk (20 to 35 years) as many as 177 respondents (86.8%). The highest education is SMA as many as 144 respondents (70.6%). The most occupations are housewives as many as 96 respondents (47.1%).

Based on table 2 above, it can be concluded that the nutritional status of toddlers in the Working Area of Posyandu Melati Candimas Village in 2022 of 204 toddlers as many as 11 toddlers (5.4%) with poor nutritional status, 145 respondents (71.1%) with good nutritional status, and 48 respondents (23.5%) with more nutritional status.

Table 2

Nutritional status	F	%
Malnutrition	11	5.4
Good Nutrition	145	71.1
More Nutrition	48	23.5

Table 3

Exclusive breastfeeding	F	%
Exclusive breastfeeding	156	76.5
No Exclusive Breastfeeding	48	23.5

Based on table 3 above, it can be concluded that exclusive breastfeeding in the Work Area of Posyandu Melati Candimas Village in 2022 in 204 toddlers as many as 156 toddlers (48.5%) with exclusive breastfeeding, as many as 48 toddlers (23.5%) not exclusive breastfeeding.

Table 4

Distribution of the Frequency of Giving MP-ASI in the Working Area of Posyandu Melati, Candimas Village in 2022

MP-ASI	F	%
No Early MP-ASI	165	80.9
Early MP-ASI	39	19.1

Based on table 4 above, it can be concluded that the provision of MP-ASI in the Posyandu Melati Work Area Candimas Village in 2022 to 204 toddlers without early MP-ASI as many as 165 mothers (80.9%) and early MP-ASI as many as 39 mothers (19.1%).

Table 5

Exclusive breastfeeding	Nutritional status						Total		P-value
	Less		Well		More				
	N	%	N	%	N	%	N	%	
Exclusive breastfeeding	7	3.4	143	70.1	6	2.9	156	76.5	0,000
No Exclusive Breastfeeding	4	2.0	2	1.0	42	20.6	48	23.5	

Based on table 5 above, it can be concluded that infants who are exclusively breastfed and undernourished are 7 respondents (3.4%), under-fives who are exclusively breastfed and have good nutritional status are 143 respondents (70.1%), under-fives who are exclusively breastfed and have good nutritional status over nutrition as many as 6 respondents (2.9%). Toddlers who are not exclusively breastfed and have poor nutritional status are 4 respondents (2.0%), toddlers who are not

exclusively breastfed and have good nutritional status are 2 respondents (1.0%), toddlers who are not exclusively breastfed and overnutrition status are 42 respondents (20.6%).

The results of the analysis using chi-square, obtained (P-Value = 0.000 < 0.05) it can be concluded that there is a relationship between exclusive breastfeeding and nutritional status in children under five 12-59 months in the Work Area of Posyandu Melati Candimas Village in 2022.

Table. 6

MP-ASI	Nutritional status						Total		P-value
	Less		Well		More				
	N	%	N	%	N	%	N	%	
No Early MP-ASI	11	5.4	144	70.6	10	4.9	165	80.9	
Early MP-ASI	0	0.0	1	0.5	38	18.6	39	19.1	

Based on table 6 above, it can be concluded that there are 11 respondents (5.4%), who are not early MP-ASI and good nutritional status 144 respondents (70.6%), 10 respondents (4.9%). Toddlers who had early MP-ASI and poor nutritional status were 0 respondents (0.0%), toddlers who were MP-ASI early and had good nutritional status were 1 respondent (0.5%), toddlers who received MP-ASI early and nutritional status were more as many as 38 respondents (18.6%).

The results of the analysis using chi-square, obtained ($P\text{-Value} = 0.000 < 0.05$) it can be concluded that there is a relationship between the provision of complementary feeding and the nutritional status of toddlers 12-59 months in the Work Area of Posyandu Melati Candimas Village in 2022.

Discussion

Toddlers who are exclusively breastfed and undernourished are 7 respondents (3.4%), under-fives who are exclusively breastfed and have good nutritional status are 143 respondents (70.1%), under-fives who are exclusively breastfed and have more nutritional status are 6 respondents (2, 9%). Toddlers who are not exclusively breastfed and have poor nutritional status are 4 respondents (2.0%), toddlers who are not exclusively breastfed and have good nutritional status are 2 respondents (1.0%), toddlers who are not exclusively breastfed and overnutrition status are 42 respondents (20.6%).

The results of the analysis using chi-square, obtained ($P\text{-Value} = 0.000 < 0.05$) it can be concluded that there is a relationship between exclusive breastfeeding and nutritional status in children under five 12-59 months in the Work Area of Posyandu Melati Candimas Village in 2022.

In line with the opinion expressed by Maryunani (2015) Exclusive breastfeeding is giving only breast milk for six months without any additional fluids, such as formula milk, oranges, honey, tea water, water and without giving other additional foods, such as bananas, milk porridge, biscuits, porridge or team rice.

After the baby is six months old, then the baby is given complementary foods with breast milk and

breast milk is still given until the baby is 2 years old or more.

In line with research conducted by Zulmi, D (2019) The Relationship Between Exclusive Breastfeeding and the Nutritional Status of Toddlers in the Work Area of the Warunggunung Public Health Center in 2018 The results of the univariate analysis that under-fives experiencing malnutrition and malnutrition were used as case samples as many as 20 (33.33%) toddlers and those with good nutrition were used as a control group (66.67%) under five, almost half (38.33%) under five were not given exclusive breastfeeding. The results of the bivariate analysis showed that there was a relationship between the history of exclusive breastfeeding and the nutritional status of children under five ($p\text{value} = 0.027$) OR ASI 8.04.

In the opinion of researchers, Breast milk also has lower levels of calcium, phosphorus, sodium, and potassium than formula, while higher levels of copper, cobalt and selenium. The content of breast milk is in accordance with the needs of the baby so that it can maximize the baby's growth including height. Based on this, it can be ascertained that the baby's needs are met, and the baby's nutritional status will be normal in both height and weight if the baby is exclusively breastfed.

Exclusive breastfeeding is a risk factor for malnutrition in infants because there is a significant effect, where infants who do not receive exclusive breastfeeding have a risk of experiencing adverse events. Breast milk contains quite complete nutrition, breast milk also contains antibodies or immune substances that will protect toddlers against infection. This causes infants who are breastfed to be less susceptible to disease and can play a direct role in the nutritional status of children under five. In addition, breast milk is adapted to the digestive system because it contains digestive enzymes so that nutrients are quickly absorbed.

According to researchers, the better the exclusive breastfeeding, which is done by the mother for her child, the better the nutritional status of the child. And conversely, the less exclusive breastfeeding is carried out by mothers for their children, the worse the nutritional status of children.

This happens because breast milk is the best food for babies because it contains all the nutrients in an ideal ratio and contains immune power. Breast milk also contains many hormones that play a role in regulation of metabolism and body composition with adiponectin hormone content. This hormone has various functions, one of which is regulation of metabolism and suppressor of inflammation related to infant weight and protection against infection during exclusive breastfeeding (Larasati, 2018).

The Relationship of Complementary Feeding and Nutritional Status to Toddlers 12-59 Months in the Working Area of Posyandu Melati Candimas Village in 2022

Toddlers who did not MP-ASI early and nutritional status were less than 11 respondents (5.4%), toddlers who did not MP-ASI early and good nutritional status were 144 respondents (70.6%), toddlers who did not MP-ASI early and over nutritional status as many as 10 respondents (4.9%). Toddlers who had early MP-ASI and poor nutritional status were 0 respondents (0.0%), toddlers who were MP-ASI early and had good nutritional status were 1 respondent (0.5%), toddlers who received MP-ASI early and nutritional status were more as many as 38 respondents (18.6%).

The results of the analysis using chi-square, obtained ($P\text{-Value} = 0.000 < 0.05$) it can be concluded that there is a relationship between the provision of complementary feeding and the nutritional status of toddlers 12-59 months in the Work Area of Posyandu Melati Candimas Village in 2022.

This is in line with the theory put forward by the Indonesian Ministry of Health (2019) so that the baby's growth is according to age. WHO/UNICEF recommends four important things that must be done, namely firstly giving breast milk to the baby immediately after birth, secondly giving only breast milk (exclusive breastfeeding) from birth to 6 months, thirdly providing complementary foods (MP-ASI) from the age of 6 months to 24 months, all four continue to breastfeed until the age of 24 months or more. The recommendation emphasizes that socially and culturally MP-ASI should be made from food that is cheap and easy to obtain in the local area (indigenous food).

In line with Nupriyanti's research (2019) Factors Affecting the Nutritional Status of Toddlers in Posyandu Kunir Putih 13 Working Areas of the Umbulharjo I Public Health Center, Yogyakarta City 2015. The results of the analysis showed that there were influences on parenting, infectious diseases, food intake, food security, environmental

health, exclusive breastfeeding, education, level of knowledge, occupation, income, number of family members with nutritional status of children under five with $p < 0.05$ and food intake were the most dominant factors affecting the nutritional status of children under five with values of $B = 0.313$ and $p = 0.027$.

According to researchers, babies aged 0-6 months only need breast milk as the main nutrient. After 6 months, complementary foods (MP-ASI) can be given. Babies aged > 6 months require complementary feeding as additional nutrition for optimal growth. One of the problems in feeding infants is the cessation of breastfeeding and early complementary feeding.

MP-ASI too early can cause the child to drink less breast milk and the mother to produce less breast milk, making it more difficult to meet nutritional needs. Children who receive less breast milk have a higher risk of infection, sometimes the MP-ASI given is often watery so that it is easy for the baby to eat so that it makes the stomach full, so that the nutrients they get are less than breast milk. Unfulfilled nutrition can lead to nutritional problems (WHO, 2010).

CONCLUSION

There is a relationship between exclusive breastfeeding and nutritional status in toddlers 12-59 months, The results of the analysis using chi-square, obtained ($P\text{-Value} = 0.000 < \alpha 0.05$).

SUGGESTION

Providing exclusive breastfeeding and complementary feeding that is appropriate for the age and needs to support growth and development and the achievement of good nutritional status in infants. Increase prevention efforts against the incidence of infectious diseases by maintaining personal hygiene and the environment around the baby.

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THE ROLE AND STRATEGY OF MIDWIFE INDEPENDENT PRACTICE (TPMB) IN ANTICIPATION OF VIRUS TRANSMISSION

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ABSTRAK : PERAN DAN STRATEGI PRAKTIK MANDIRI BIDAN (TPMB) DALAM ANTISIPASI PENULARAN VIRUS

Latar Belakang: Penyebaran Covid-19 varian omicron sangat cepat dan kasus bertambah banyak dan membuat masyarakat mengalami kondisi *hard stupidity*, masyarakat lelah dan jenuh sehingga memicu lonjakan kembali kasus Covid-19. Tempat Praktik Mandiri Bidan (TPMB) merupakan salah satu fasilitas kesehatan tempat masyarakat mendapatkan layanan kesehatan ibu dan anak. Berdasarkan data Riskesdas 2018, Pelayanan ANC oleh bidan sebesar 82,4% dan 41% diantaranya di TPMB 80% ke tempat praktik mandiri bidan. Pertolongan Persalinan oleh bidan sebesar 62,7% dan 29% diantaranya ditolong di TPMB serta pelayanan keluarga berencana 76,5% dilakukan oleh bidan dan 54,6% diantaranya dilakukan di TPMB. Hal ini menjadikan Bidan menjadi salah satu garda terdepan dalam upaya memutuskan rantai penularan covid-19. Bidan delima merupakan ikon tempat praktik mandiri bidan yang mengedepankan mutu layanan kebidanan

Tujuan: Mengetahui perbedaan pengetahuan, peran dan strategi Tempat Praktik Mandiri Bidan (TPMB) dalam antisipasi penularan virus omicron di wilayah kerja Jakarta Timur tahun 2022.

Metode: Pendekatan kuantitatif menggunakan desain penelitian *cross sectional* dengan teknik *purposive sampling* pada 100 sampel TPMB di wilayah kerja Jakarta Timur Tahun 2022 yang dilakukan pada Februari – April 2022 dengan kuesioner menggunakan analisis analitik.

Hasil: Mayoritas TPMB anggota Bidan Delima (51%), berpengetahuan baik (57%), berperan baik (58%) dan memiliki strategi yang baik (54%). Pengetahuan, peran dan strategi dalam mengantisipasi penularan virus omicron tidak memiliki hubungan yang bermakna ($P\text{-value} > 0.05$) dengan status keanggotaan TPMB sebagai bidan delima di wilayah kerja Jakarta Timur tahun 2022.

Kesimpulan: Pengetahuan, peran dan strategi bidan dalam mengantisipasi penularan virus omicron tidak berhubungan dengan status keanggotaan sebagai bidan delima.

Saran: Dalam menjalankan peran sebagai bidan delima di fasilitas pelayanan Tempat Praktik Bidan Mandiri harus menerapkan 3M, 3T, dan vaksinasi dengan baik, transparan dan terbuka kepada masyarakat dengan komunikasi yang baik, tetap menggunakan masker, dan mencuci tangan.

Kata Kunci: Bidan Delima, Omicron, Peran, Strategi, Tempat Praktik Mandiri Bidan

ABSTRACT

Background: The spread of the Covid-19 variant of the omicron was very fast and the number of cases increased and caused the community to experience a hard condition, the community was tired and bored so that it triggered a spike in Covid-19 cases again. The Midwife Independent Practice Center (TPMB) is one of the health facilities where the community gets maternal and child health services. Based on the 2018 Riskesdas data, ANC services by midwives amounted to 82.4% and 41% of them at TPMB 80% to the midwife's independent practice. Childbirth assistance by midwives amounted to 62.7% and 29% of them were assisted at TPMB and 76.5% of family planning services were provided by midwives and 54.6% of them were provided at TPMB. This makes midwives one of the front guards in efforts to break the chain of transmission of covid-19. Delima midwives are icons of midwifery independent practices that prioritizes the quality of midwifery services.

Purpose : Knowing the differences in knowledge, roles and strategies for the Midwife Independent Practice Center (TPMB) in anticipating the transmission of the omicron virus in the East Jakarta work area in 2022.

Method: The quantitative approach uses a *cross-sectional* research design with a *purposive sampling* technique on 100 TPMB samples in the East Jakarta working area in 2022 which was conducted in February – April 2022 with a questionnaire using analytical analysis.

Results: The majority of TPMB members of Delima Midwives (51%), have good knowledge (57%), have a good role (58%) and have a good strategy (54%). Knowledge, role and strategy in anticipating transmission of the omicron virus do not have a meaningful relationship ($P\text{-value} > 0.05$) with TPMB membership status as a delima midwife in the East Jakarta working area in 2022.

Conclusion: Midwives' knowledge, roles and strategies in anticipating transmission of the omicron virus are not related to membership status as a delima midwife.

Suggestion: In carrying out the role as a delima midwife in a service facility where the Independent Midwife Practice must apply 3M, 3T, and vaccination properly, be transparent and open to the public with good communication, continue to use masks, and wash hands.

Keywords: Delima Midwife, Omicron, Role, Strategy, Midwife Independent Practice Place

INTRODUCTION

Two years passed after COVID-19 was identified as a new type of disease in Wuhan City, China on January 7, 2020 (Kemenkes RI, 2020). The rapid spread of the Omicron variant of Covid-19, active cases of Covid-19 continue to grow. Still according to data from the Covid-19 Task Force, there were an additional 40,489 new cases of Covid-19 on Friday (11/2). This brings the total to 4,708,043 positive cases of Corona (Hidayat, 2022). The positivity rate or the percentage of positive cases in the last week in Jakarta was 2.0 percent, while the percentage of positive cases in total was 11.0 percent (Mashabi, 2022). Active cases of Omicron in DKI Jakarta increased significantly. Based on the instruction of the Minister of Home Affairs Number 1 of 2022 concerning PPKM Level 3, 2, 1, DKI Jakarta was again declared to have a level 2 status (Saputro, 2022). Health Minister Budi Gunadi Sadikin revealed that the pattern of spreading the Omicron variant began in Jakarta. seeing the pattern of spread, his party asked the local government to increase the COVID-19 vaccination program, especially for the elderly in the midst of the increasing Omicron variant in the country (Donny Adhiyasa, 2022). The number of cases of the Omicron variant of Covid-19 in Jakarta is 1,313 people, and is dominated by foreign travelers (PPLN) (Junita, 2022).

The government is currently on alert to the possibility of a third wave of the Covid-19 Pandemic (WHO, 2021). Efforts to inhibit the rate of increase in cases, namely with 3M (Wearing masks, Keeping distance, Washing hands using soap), 3T (*Testing, Tracing* and *Treatment*) and Vaccination (PMO KPCPEN, 2020) have been run by the government even for vaccinations today have been given boosters. Epidemiologists from the University of Indonesia said that Indonesia is currently experiencing a condition of *hard stupidity*, people are tired and saturated, triggering a re-surge in Covid-19 cases with the emergence of new variants (CNN Indonesia, 2021).

The Covid-19 pandemic presents challenges for midwives as well, including those related to, among other things: community awareness of mothers and families affected by Covid-19; health services for mothers and newborns during a pandemic; the lack of guidelines for MCH; family planning and reproductive health services; and the need to prioritise health services over all else (Beek et al., 2019; Shaban et al., 2012), as evidenced by the need for midwives' independent judgement in this regard, Midwifery during the Covid-19 pandemic experienced changes in primary healthcare facilities and midwife independent practise, limiting services. The high number of Covid-19 patients receiving care at referral hospitals has an effect on the neonatal emergency referral procedure (KGDMN) scenario (Nurjasmi, 2020).

Before developing the protocol connected to the responsibilities of health workers, the 2020 Covid-19 handling acceleration task committee reportedly defined mandatory requirements, such as: 1) Understanding the spread of Covid-19 and being able to spot danger indicators and emergencies; 2) Being familiar with the Covid-19 management algorithm; 3) Being able to safely and appropriately utilise personal protective equipment; 4) Be able to instruct the client's relatives in the community about health issues (Gugus Tugas Percepatan Penanganan COVID-19, 2020).

Facing the conditions, the government expects medical personnel to continue to maintain and continue to remind the public to continue to educate the health protocols related to the anticipation of the transmission of Covid-19 as this is part of the role and strategy of health workers, including midwives. Based on Primary Data from the East Jakarta branch of the Indonesian Midwives Association (IBI), it has 223 TPMB, of which during the pandemic there were 2 TPMB that were closed. In Early January 2022, TPMB was exposed to covid after the boster was not yet there or Zero. But as Covid cases rise. TPMB began to be exposed to

Covid again, after covid cases had dropped at the end of the year. From the data obtained until February 12, 2022, 130 midwives were confirmed positive for COVID-19, there were no deaths, 1 person was treated and 129 people were self-isolated.

The majority of the respondents (68.6%) have good knowledge and 82.9% have a positive attitude about the protocol antenatal care during the Covid-19 period, according to previous research on the description of the knowledge and attitudes of midwives regarding health protocols during the Covid-19 pandemic in the Dharmasraya district (Khotimah, 2021). Another study was out in the South Kalimantan region discovered no connection between the actions taken by midwives to stop the spread of Covid-19 and their attitudes or knowledge (Tazkiah, 2020).

The Midwife Independent Practice Center (TPMB) is one of the health facilities where the community receives maternal and child health services. Based on Riskesdas 2018 data, ANC services by midwives amounted to 82.4% and 41% of them in TPMB 80% to independent practice places of midwives. Childbirth Assistance by midwives amounted to 62.7% and 29% of them were helped at TPMB and family planning services 76.5% were carried out by midwives and 54.6% of them were carried out at TPMB (Riskesdas, 2018) This makes Midwives one of the frontlines in an effort to break the chain of transmission of covid-19 because midwives provide complex services and have a wide scope throughout the life cycle. So that the role and strategy of midwives are considered very necessary to be

RESULTS AND DISCUSSION

Univariate Analysis

evaluated. For this reason, researchers are interested in studying the Role and Strategy of Midwife Independent Practice Places (TPMB) in anticipating the transmission of the omicron virus in the East Jakarta work area in 2022.

METHOD

This research is a non-experimental study with a *cross-sectional approach*. This research was carried out in the East Jakarta work area. This research was conducted in February – April 2022. The population in this study was all TPMB in the East Jakarta work area, whether they were members of the pomegranate Midwife or not, namely 223 TPMB. In this study, researchers used 100 TPMB as a study sample. Samples are taken based on *inclusion* and *exclusion* criteria. *Karitesia inclusion*: TPMB in East Jakarta work area *and* exclusionary k riteria: TPMB who is not willing to be a respondent.

The determination of samples in this study was carried out with a *type of non-probability sampling* using *purposive sampling techniques*. The dependent variables of this study are the membership of pomegranate midwives and independent variables, namely: role and strategy. This study used primary data from the results of online questionnaires, *google form questionnaires*. Data were obtained by univariate analysis with descriptive and bivariate analysis with *chi square test*.

Table 1
Overview of the Characteristics of the Midwife Independent Practice Place (TPMB) to Anticipate Omicron Virus Transmission in the East Jakarta Work Area in 2022

Variable	Frequency (n)	Percentage (%)
Age		
<35 Years	15	15
≥35 Years	85	85
Education		
DIII Midwiferys	64	64
Midwiferys DIV	26	26
SI Midwiferys	6	6
SII Midwiferys	4	4
Twigs TPMB		
Cakung	31	31
Cipayung	11	11
Ciracas	11	11
Duren Palm	17	17
Jatinegara	9	9
Kramat Jati	3	3

Matraman	3	3
Rebo Market	5	5
Pulo Gadung	10	10
Long Time to Open TPMB		
<15 Years	63	24
≥15 Years	37	76

Source: Primary Data

Table 1. It shows that the characteristics of respondents related to the role and strategy of TPMB in anticipating the spread of the omicron virus were seen that: the majority of respondents aged ≥35 years old, namely 85 respondents (85%), educated in MIDWIFERY DIII, namely 64 respondents (64%), Cakung branch, namely 31 respondents (31%) and the length of opening TPMB <15 years 63 respondents (63%).

Based on Table 2. It shows that 51 TPMB (51%) members of pomegranate midwives and not

members of Pomegranate Midwives. 57 respondents (57%) had good knowledge and 43 respondents (43%) had less knowledge about the omicron virus. 58 TPMB (58%) have a good role and 42 TPMB (42%) have a less role norm in anticipating the transmission of the omicron virus. 54 TPMB (54%) have a good strategy and 46 TPMB (46%) have a less strategy in anticipation of omicron virus transmission in the East Jakarta work area in 2022.

Table 2
Distribution of Knowledge Frequency, Role and Strategy of Midwife Independent Practice Places (TPMB) to Anticipate Omicron Virus Transmission in the East Jakarta Work Area in 2022

Variable	Frequency (n)	Percentage (%)
Delima Midwife		
Yes	51	51
Not	49	49
Knowledge		
Good	57	57
Less	43	43
Role		
Good	58	58
Less	42	42
Strategy		
Good	54	54
Less	46	46

Source: Primary Data 2022

Bivariate Analysis

Based on Table 3. It is known that all variables are not related to the membership status of Pomegranate Midwives in anticipation of omicron

virus transmission, namely: Midwife Knowledge (p_value 0.318), role (p_value 0.423) and strategy (p_value 0.167).

Table 3
Determinants of Membership Status of Pomegranate Midwives and Not Pomegranate Midwives East Jakarta 2022

Category	Pomegranate Midwife				Total		P-value
	Not a Bidel		Bidel				
	n	%	n	%	N	%	
Midwife Knowledge							
Bad	24	57,1	18	42,9	42	100	0.318
Good	27	46,6	31	53,4	58	100	
The Role of midwives							
Bad	24	55,8	19	44,2	43	100	0,426
Good	27	47,4	30	52,6	57	100	
Midwife Strategy							
Bad	27	58,7	19	41,3	46	100	0.167
Good	24	44.4	30	55.6	54	100	

Source: Primary Data

The relationship of Knowledge with the membership of the Pomegranate Midwife in anticipation of the transmission of the omicron virus

The results showed that the majority of TPMB had good knowledge but there was no proven relationship between TPMB membership status and its role in anticipating the transmission of the omicron virus ($pvalue \leq 0.05$). in line with the research on "The Role of Midwives in Antenatal Services during the COVID-19 Pandemic", namely midwives have good knowledge (98.2%) about anticipating the transmission of the omicron virus (Ariyani et al., 2021). TPMB knowledge with the membership status of pomegranate midwives and not pomegranate midwives, does not have a significant difference. However, there are still 18 TPMB members of pomegranate midwives who have insufficient knowledge.

Midwives in improving their knowledge competence follow various scientific activities which are currently widely carried out online. In reality, there are differences in the provision of midwifery services in the pandemic era compared to before the pandemic, especially the implementation of PPE and other health protocols.

The relationship of the role with the membership of the Pomegranate Midwife in anticipation of the transmission of the omicron virus

The results showed that the majority of TPMB had a good role but there was no proven relationship between TPMB's membership status as a

pomegranate midwife and her peran in anticipation of omicron virus transmission ($Pvalue \leq 0.05$). This is in line with the research on "Anxiety, Midwifery Services, and Providing Information about the Corona Virus (COVID-19) by Midwives in the Madura Region", namely midwives have a good role as implementers and educators (Susanti, 2020). In line with the research on "The Active Role of Midwives in MCH and Family Planning Services during the COVID-19 Pandemic at the Kemrajen II Health Center", midwives perform their roles very well in carrying out MCH and KB services in accordance with health protocols (Ikhwah Mu'minah, 2021). This research is in line with the Midwifery Law No.4 of 2019 that Midwifery Services are a form of professional services that are an integral part of the health service system provided by midwives independently, collaboratively, and/or referrals. During the COVID-19 pandemic and facing the New Normal era, health services must continue to run optimally, safely for patients and midwives with various adjustments based on covid handling guidelines or health protocols (Undang-Undang Kebidanan No.4 Tahun 2019 Tentang Pelayanan Kebidanan, 2019).

Respondents who have a good role in anticipating the transmission of the omicron virus by looking at the role as an midwiferys service provider by making the following efforts to use PPE in accordance with the guidelines for patient services during the pandemic, serving patients according to fixed procedures (protap) , applying hand hygiene and physical distancing. Peran as a manager of

midwifery services by providing innovative services by utilizing digital at the registration and anamnesis stages, providing hand washing stations and providing masks for patients or families who do not use masker, conducting routine reviews on objects in the TPMB touched by patients and determining the number of daily visits of services. The role of an extension officer and counselor by always reminding patients / clients who come to comply with health protocols. Providing counseling during limited visits as well as facilitating online consultations, providing socialization about services, facilitating midwifery services through social media, receiving contracts / promises of service schedules through social media, It can be assumed that this is done at the encouragement of within even from the environment or from the organization. Although in general, midwives in the East Jakarta area have a good role, if you look at it more deeply, the role carried out by the majority is only as an implementer, managers and educators, it is seen from the role as a researcher is still very lacking. Of the 100 TPMB only 6 TPMB have conducted research. This is quite sad. In fact, with the results of research, it is not only able to provide better services according to the right data.

Strategy Relationship with Pomegranate Midwife membership in anticipation of omicron virus transmission

The results showed that the majority of TPMB had a good strategy but there was no proven relationship between TPMB membership status and its strategy in anticipating the transmission of the omicron virus ($Pvalue > 0.05$) The various strategies carried out by TPMB in breaking the omicron virus chain are almost the same as the role carried out as a manager of midwifery services. TPMB restricts patient/client visits, complementing the infrastructure at TPMB in accordance with service guidelines during the pandemic. Many midwives have improved their competence by participating in various webinars conducted by both the government and the private sector.

CONCLUSION

From the results of the research that has been carried out, it can be seen that the status of TPMB membership is not related ($Pvalue > 0.05$) to knowledge, roles and strategies in anticipating the

transmission of the omicron virus in the East Jakarta work wizard in 2022.

SUGGESTION

In carrying out the role as a delima midwife in a service facility where the Independent Midwife Practice must apply 3M, 3T, and vaccination properly, be transparent and open to the public with good communication, continue to use masks, and wash hands.

ACKNOWLEDGMENTS

Thank you to the Midwife of the East Jakarta work area who has been willing to be a respondent to this study.

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