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Original Research

Late Adolescence Behavior About Preconception Care During The Pandemic

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ABSTRACT

Background: The number of early marriages in Malang City increases every year, but health problems such as obesity, CED, smoking and drinking alcohol behavior, premarital sex, are still common. Thus, at this phase it is important to start planning and preparing for the future, one of which is through preconception care. The purpose of this study is to describe the late adolescents behaviour regarding preconception care in Sumbersari, Malang.

Methods: The design of this research is descriptive quantitative with a survey approach. The sample in this study were late adolescent aged 18-22 years old in Sumbersari, Malang and obtained 70 samples by using purposive sampling. Data of this study was collected online by using google forms. The tool of collecting data was researcher-made questionnaire which consist of 4 indicators (life style, nutritional preparation, health reproduction, and substances exposure). From the validity and reliability test of the questionnaire obtained 26 questions for boys and 25 questions for girls. Analysis data procedure was using descriptive analysis techniques.

Results: From 70 late adolescent obtained that their preconception care behavior was mostly in the enough category with 53.3% in men and 60% in women.

Conclusion: Based on the results of the study, it is known that the preconception care behaviour in adolescents during the pandemic is sufficient. It means that preconception care behaviour in adolescents still requires improvement.

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INTRODUCTION

Adolescence is a transition period from children to adults. According to the theory of Santrock, (2002) adolescent phase begins at the age of 10 to 12 years and ends at the age of 18 to 22 years. Psychosocially, adolescents are divided into 3 stages, early adolescence, middle adolescence, and late adolescence (Batubara 2016). Typical features of adolescents are the search for identity, concern for appearance, vulnerability

to commercial problems, pressure from peer groups, and lack of concern for health problems (Meeus 2016).

Most of the common problems that occur in adolescents are behavioral problems or deviant habits, both in terms of health, morals and social. This is based on *BPS* 2018 data which reports that smoking behavior in adolescents aged 15-19 years and 20-24 years has increased from 10.46% and 29.01% in 2017 to 20.59% and 33.41% in 2018. In East Java, the percentage of adolescents aged 15-24 years in Malang City who smoked was 29.2%, occupying the top 10 among cities/districts in East Java (BPS Jatim, 2018).

Based on East Java 2018 health profile, the percentage of people aged > 18 years were obese as much as 22.37% and 13.75% were overweight, higher than the Indonesian average. It was also reported that the trend for the highest percentage of first sexual intercourse were in 15-19 year age group, increased from 59% in the 2012 IDHS to 74% in the 2017 IDHS. 12% of unwanted pregnancies were reported by women and 7% were reported by men who have partners with unintended pregnancies (BKKBN 2017).

Moreover, 23.07% of adolescents have their first marriage age under 19 years. Early marriage in adolescents in Indonesia occupies the second country with the highest child marriage rate in Southeast Asia after Cambodia. This pandemic has made the number of early marriages increase, 34,000 applications for marriage dispensation were submitted to the Religious Courts in January to June 2020, this number increased from 2019 which was 23,126 cases of marriage dispensation. This situation is caused by economic problems, school closures which lead to a decrease in positive activities and the availability of information related to reproductive health, as well as the increase in pregnancies outside of marriage during the pandemic (Andina 2021).

In Malang City, based on data from the *KUA* as of January-July 2020, cases of early marriage rose from 47 cases to 140 cases in the same time period. Of all these cases, 50% were caused by pregnancies outside of marriage. The *PPPA* Ministry noted that until June 2020 the number of child marriages increased to 24,000 during the pandemic.

Based on that situation, it is considered important for adolescents, especially late adolescents (18-22 years) to get preconception care moreover in pandemic era. Late adolescence is considered the right age for adolescents to begin preparing for their reproductive life through preconception care because according to data from the Central Statistics Agency, (2019) the highest percentage of marriages occurs in adolescents with an age range of 19-21 years (33.41%). In addition, psychologically late adolescents begin to pay attention to their future and are considered to have started to be stable in terms of psychology, biology, and social (Batubara 2016).

Preconception care is the provision of biomedical, behavioral, and social health interventions for women and men prior to conception. The goal of preconception is not only a good outcome of conception, but also to keep men and women healthy overall regardless of whether they plan to have children or not. Preconception behavior consists of lifestyle settings, nutritional preparation, reproductive health, and exposure to substances (Hemsing, Greaves, and Poole 2017). Preconception is given to every individual, whether male or female because more evidence proves that not only women are associated with negative reproductive outcomes, but also men (Mello et al. 2019).

The importance of increasing preconception care behavior in adolescents is supported by research that men who received preconception care were more likely to

and intend to change risky behavior and most women (83%) who planned their pregnancy reported 1 lifestyle changes in preparation for pregnancy (Goossens et al. 2019; Goossens and Beeckman 2018). In a 2018 national study, it was seen that there was a significant relationship between the use of preconception care and the BMI status of preconception women (Balebu and Labuan 2019).

Based on this explanation, the researcher decided to conduct a research on preconception care behavior in late adolescence during pandemic in Sumbersari, Malang. Due to minimum national research or journals that explore preconception care in adolescents especially in pandemic era. It is hoped that this research can be the basis for further research.

MATERIALS AND METHOD

This research is descriptive quantitative study with survey approach. It was conducted among adolescent in Sumbersari, Malang, during February to June, 2021, after obtaining Ethical Clearance from the Institutional Review Board from State Health Polytechnic of Malang. The sample of this research was 70 adolescent who live in Sumbersari, Malang which were conducted with purposive sampling technique. Inclusion criteria for sample was late adolescent, not married yet, and could access google form, cause the data collection was done by online.

The research instrument used was a closed questionnaire. Two self structured and validated questionnaire was developed. The results of the validity test shown that there were 26 valid items for the male questionnaire and 25 valid items for the female questionnaire from the 42 items tested ($r_{count} > 0.3610$ for male questionnaires and $r_{count} > 0.3120$ for female questionnaires). While the results of the reliability test calculation show that the questionnaire items have a coefficient of r between 0.6000-0.79999 which means that the reliability of the item is high. Indicators measured from the adolescent preconception behavior were: life style, nutrition, health reproduction, and substances exposure.

Research data was analyzed by using descriptive statistic that calculates the mean and percentage. Furthermore, to determine the level of adolescent behavior values was using a mean hypothetic formula by Azwar (2012) that matches the average with the score interval in the range of categories, namely: good, enough, or poor. This research has passed the ethical feasibility test with the registration number: 108/KEPK-POLKESMA/2021.

RESULTS

A total of 70 late adolescent who met the sample criteria were willing to become respondents. These late adolescents 57.1% were female, and 42,9% were male. Based on the table 1. known that majority of late adolescents have high school education (75.7%). Most of the respondents live with their parents (60%) and come from urban areas (68.6%).

Table 1. Characteristics Respondents of Preconception Care Behavior in Adolescents in Sumbersari 2021

Characteristics	f(%)
Last Education	
Elementary School	0 (0)
Junior High School	4 (5,7)
Senior High School	53 (75,7)

Characteristics	f(%)
University	13 (18,6)
Total	**70 (100)**
Status of Residence	
Dorms/Contract	26 (37,1)
Living with parents	42 (60)
Others	2 (2,9)
Total	**70 (100)**
Origin	
Rural	22 (31,4)
Urban	48 (68,6)
Total	**70 (100)**

Late adolescent, mostly planning to get married at the age of 20-25 years (54.3%) and plan to have children at the age of 21-35 years (91.4%). About 67.1% of adolescents did not plan to delay pregnancy after marriage.

Table 2. Family Planning of Late Adolescents in Sumbersari 2021

Family Planning	f(%)
Marriage Age Plan	
<20 years	0 (0)
20-25 years	38 (54,3)
26-30 years	22 (31,4)
>30 years	7 (10)
Not planning	3 (4,3)
Total	**70 (100)**
Age Plan for Having Child	
<21 years	0 (0)
21-35 years	66 (94,3)
>35 years	3 (4,3)
Not planning	1 (1,4)
Total	**70 (100)**
Delaying pregnancy after marriage	
Yes	23 (32,9)
No	47 (67,1)
Total	**70 (100)**

Based on the results of the study using a behavioral questionnaire for preconception care in men, it was found that 70% of male late adolescents had a habit of smoking from rarely to often, 36.7% had a habit of drinking alcohol, 90% had a habit of consuming caffeine >3 cups/day, 46,7% often sleep less than 6-8 hours, 53,3% continue to engage in risky behavior despite knowing the effect, just less than 20% of male late adolescent who seek information about health and taking seriously physical activity.

From nutrition intake known that 100% respondent consuming instant food or fast food >3 times/month. Late adolescent health reproduction during the pandemic shown that 50% of male adolescents often changing his underpants less than twice per day and 43,3% had masturbation every few days. During the pandemic 56,7% male adolescents often obey the health protocols with using personal protective equipment and wash his

hand to minimize exposure. For overall behavior, based on table 3, most of male late adolescent behavior have "enough" preconception behavior.

Table 3. Preconception care behavior in male late adolescent during the pandemic in Sumbersari Village in 2021

No	Category Preconception Care Behavior	Frequency (f)	Percentage (%)
1.	Good	11	36,7
2.	Enough	16	53,3
3.	Poor	3	10
	Total	**30**	**100**

Besides, based on the result of the study using a behavioral questionnaire for preconception care in woman, it was found that 67,5% of female late adolescents had a habit of consuming caffeine >3 cups/day from rarely to often, 92,5% sleep less than 6-8 hours, just 12,5% to 20% who were often doing physical activity, only 22,5% seek information about health, 40% of the female adolescents can handle stress and at the same percentage, often feels lazy to checked their health to health care facility.

From nutrition intake known that 100% respondent consuming instant food or fast food >3 times/month and just 25% female who were consuming fe. Late adolescent health reproduction during the pandemic shown that 37,5% of female adolescents often changing his underpants less than twice per day and 50% has using vaginal douching. During the pandemic more than 60% female adolescents often obey the health protocols with using personal protective equipment and wash her hand to minimize exposure. In the table 4 shown most of female adolescents also have preconception care behavior in enough category (60%).

Table 4. Preconception care behavior in female late adolescent during the pandemic in Sumbersari Village in 2021

No	Category Preconception Care Behavior	Frequency (f)	Percentage (%)
1.	Good	14	35
2.	Enough	24	60
3.	Poor	2	5
	Total	**40**	**100**

Based on the characteristics that shown in table 5 dan 6, the majority of male adolescents who had better preconception care had a tertiary education (71.4). Meanwhile, in female adolescent, the behavior of preconception care was better in respondents who had a high school education (35.5%). Based on the status of residence, some (50%) female adolescents who live other than their parents or boarding house and in the male adolescents who lived in a boarding house (57.1%) have better preconception behavior.

Based on their origin, female adolescents who came from urban areas have a higher percentage of preconception care behavior (32%) besides on the male adolescents, better behavior shown in respondent who is came from rural areas (57.1%).

Table 5. Male late adolescents preconception care behavior based on characteristics.

Male Adolescent Characteristics	Behavior		
	Good F(%)	Enough F(%)	Poor F(%)
Last Education			
Junior High School	0 (0)	1 (100)	0 (0)
Senior High School	6 (27,3)	13 (59,1)	3 (13,6)
University	5 (71,4)	2 (28,6)	0 (0)
Status of Residence			
Dorms/Contract	4 (57,1)	3 (42,9)	0 (0)
Living with parents	6 (28,6)	13 (61,9)	2 (9,5)
Others	1 (50)	0 (0)	1 (50)
Origin			
Rural	4 (57,1)	3 (42,9)	0 (0)
Urban	7 (30,4)	13 (56,5)	3 (13)

Table 6. Female late adolescents preconception care behavior based on characteristics.

Female Adolescents Characteristics	Behavior		
	Good F(%)	Enough F(%)	Poor F(%)
Last Education			
Junior High School	0 (0)	3 (100)	0 (0)
Senior High School	11 (35,5)	18 (58)	2 (6,5)
University	1 (16,7)	5 (83,3)	0 (0)
Status of Residence			
Dorms/Contract	4 (22,2)	13 (72,2)	1 (5,6)
Living with parents	7 (35)	12 (60)	1 (5)
Others	1 (50)	1 (50)	0 (0)
Origin			
Rural	4 (26,7)	11 (73,3)	0 (0)
Urban	8 (32)	15 (60)	2 (8)

Male adolescent showed better behavior in most of those who planned to get married at the age of 26-30 years (53.8%), almost most of the respondents who planned to have children at the age of 21-35 years (40.7%), and some Majority (53.8%) of adolescents who delay pregnancy. Female adolescent also showing better behavior in almost half of those who plan to get married at the age of 26-30 years (33.3%), plan to have children at the age of 21-35 years (30.8%), and some respondents who plan to postpone pregnancy after married (50%).

Table 7. Male late adolescents preconception care behavior based on family planning.

Male Adolescent Family Planning	Behavior		
	Good F(%)	Enough F(%)	Poor F(%)
Marriage Age Plan			
<20 years	0 (0)	0 (0)	0 (0)
20-25 years	2 (22,2)	5 (55,6)	2 (22,2)
26-30 years	7 (53,8)	6 (46,2)	0 (0)
>30 years	2 (28,6)	4 (57,1)	1 (14,3)

Male Adolescent Family Planning	Behavior		
	Good F(%)	Enough F(%)	Poor F(%)
Not planning	0 (0)	1 (100)	0 (0)
Age Plan for Having Child			
<21 years	0 (0)	0 (0)	0 (0)
21-35 years	11 (40,7)	13 (48,1)	3 (11,1)
>35 years	0 (0)	3 (100)	0 (0)
Not planning		0 (0)	0 (0)
Delaying pregnancy after marriage			
Ya	7 (53,8)	5 (38,5)	1 (7,7)
Tidak	4 (23,5)	11 (64,7)	2 (11,8)

Table 8. Female late adolescents preconception care behavior based on family planning.

Female Adolescents Family Planning	Behavior		
	Good F(%)	Enough F(%)	Poor F(%)
Marriage Age Plan			
<20 years	0 (0)	0 (0)	0 (0)
20-25 years	9 (31)	18 (62,1)	2 (6,9)
26-30 years	3 (33,3)	6 (66,7)	0 (0)
>30 years	0 (0)	0 (0)	0 (0)
Not planning	0 (0)	2 (100)	0 (0)
Age Plan for Having Child			
<21 years	0 (0)	0 (0)	0 (0)
21-35 years	12 (30,8)	25 (64,1)	3 (5,1)
>35 years	0 (0)	1 (100)	0 (0)
Not planning	0 (0)	0 (0)	0 (0)
Delaying pregnancy after marriage			
Yes	5 (50)	4 (40)	1 (10)
No	7 (23,3)	22 (73,3)	1 (3,3)

DISCUSSION

Behavior is influenced by internal and external factors. Internal factors are such as self-awareness and the character of each individual. While external factors are such as environment, supporting facilities, policies, and support. According to L.Green's theory, behavior is influenced by 3 main factors including: predisposing factor, enabling factor, and reinforcing factor. Predisposing factors is factors that facilitate and underlie the occurrence of certain behaviors that are manifested in the form of knowledge, attitudes, beliefs, reliance, values and culture as well as individual characteristics, that is: knowledge about reproductive health, attitudes, academic education, respondent characteristics, religious norms, legal norms and social norms.

Enabling factors is factors that allow for certain behaviors to occur which are tangible in the physical environment, the availability of facilities, that is the availability of print and electronic media, health workers (instructor). Reinforcing factors is factors that strengthen the occurrence of these behaviors, that is: income, support, criticism both from family (parents), peers, and teachers (Notoatmodjo 2010). The results of this

study already shown preconception behavior in adolescents based on their characteristics which is a predisposing factor of behavior.

The characteristics that assessed in this study include the latest education, status of residence, and area of origin. Based on the last education of respondent, known that adolescent with higher education has better preconception behavior. Higher education creates better preconception behavior because more knowledge and information is obtained, which is related to better decision-making abilities because they are able to consider good and bad actions more objectively. The higher a person's education, the better his knowledge. This knowledge will influence in shaping attitudes and behavior so that the higher a person's education will have a positive behavior (Fauziah and Maesaroh 2017).

Besides education, environment also has influence on behavior. Bozzini et al. (2021) stated that the factors that cause risky behavior in adolescents include the environment, family patterns, and the presence of other risky behaviors. Environmental factors in this study are seen from the status of residence and origin of adolescents. Residential status is considered to be factor that influence behavior because adolescents who do not live under parental supervision usually tend to feel free to act.

In accordance with the results of research by Wardani & Septianingrum, (2018) which states that adolescents who do not live with their parents are more at risk of falling into risky behaviors such as drug abuse. However, different results were seen in this study, late adolescent who did not live with their parents mostly had better preconception care behavior. It could be happened because there is another factor which influence their better behavior like peer influence, rules and regulation in their new environment, information, etc.

While origin affects the values held by a person such as cultural boundaries, norms, and habits. Male adolescent from urban areas had lower preconception care than those from rural areas, on the other hand, female adolescent from urban areas had better preconception care behavior. The results in male adolescents are not in line with the research of (Suarni, Fitarina, and Aliyanto 2020)which states that urban adolescents have lower risk sexual behavior than adolescents who live in rural areas. This is influenced by self-esteem, religiosity, and social activities.

Another factor that influenced preconception behavior is family planning, which were examined through the marriage age plan, the age plan for having children, and pregnancy delay after marriage also has big impact on preconception behavior. Based on the journal, men and women who plan their pregnancy will have more potential to change their behavior for the better (Starbird and Norton 2020; Stephenson et al. 2018). In an Australian study, 81% of women planning a pregnancy had started taking supplements and 47% had started consulting medical personnel (Chivers et al. 2020).

The grouping of age plan for marriage is based on health science, which states that the ideal age for biological and psychological maturity is 20 to 25 years for women, then 25 to 30 years for men. This age is considered the best period for marriage, because already matured enough and can mentally stable on average. While the grouping of age plans for having children is based on healthy reproductive age where the reproductive organs of both men and women are in the most optimal phase, namely in the age range of 20-35 years BKKBN (2011).

Besides character and family planning, attitudes of adolescents also take part in influencing behavior. Based on the result showed that both male or female adolescents has lack of health literacy and awareness about their health. A study on university

students in Taiwan stated that a high level of health literacy affects health status and positive health behaviors including eating, exercising, and sleeping behavior (Hsu, Chiang, and Yang 2014). During pandemic, television (TV) and family were indicated to be the main sources for pandemic-related health information (Riiser et al. 2020).

So, for other health information most likely also obtained in the same way. This information source is considered less compatible with the character of teenagers, especially now that social media is far more developed than TV and not all teenagers are able to exchange ideas with their parents. A study in Yogyakarta suggests that health education can be carried out quite effectively by using the WhatsApp communication media based on the following: the percentage of correct answers from the pretest 68.42% (13/19) increased to 76.19% post test (16/21) (Brahmana and Aristyasari 2021).

Preconception care behavior are still low because in Indonesia preconception care is rarely known by the society, the scope of its services is also small. As stated by Wilson, (2018) in his journal, the implementation of preconception is still not well socialized and applied by both patients and service providers. In Indonesia, actually there are many communities and youth health programs aimed at disseminating information and promoting health for adolescents, such as Genre, UKS, PKPR, *posyandu* of youth, and many more. However, its utilization is still very minimal and less widespread in the target of community.

This statement is supported by research from Sari, Musthofa, and Widjanarko (2017) show that most adolescent (61.5%) have low participation in PKPR activities. Information provided in the program is still in scope as to how to maintain reproductive health, reproductive health diseases, nutrition, and life style. Detailed information about preconception care is rarely or yet to be discussed in existing programs. Even more, the use of *posyandu* preconception in Banggai district, showed that the average visit of fertile women at *posyandu* was only 43.1% (Balebu and Labuan 2019).

This definitely affects the preconception care behavior in the society especially adolescent because this is among to enabling factor, that is the unavailability of facility or consultant that provide preconception care information for adolescent. It is quite unfortunate because in fact, preconception care already has its laws and regulations. However, the scope is only for women and is still very rarely discussed among health provider or society.

Enabling factors here can ultimately affect the reinforcing factor because the absence of socialization and information make people unaware of the existence and importance of preconception care. So that the reinforcement that should be obtained from the environment does not exist because the environment is still unfamiliar with preconception care.

CONCLUSION

Based on the study, it is known that the preconception care behaviour in adolescents during pandemic is sufficient. It means that preconception care behaviour in adolescents still requires improvement by increasing awareness of health and optimizing services and preconception socialization by health providers. During a pandemic, this can be done by optimizing the role of peer groups in *youth* classes held online using zoom meetings or *whatsapp* groups, maximizing youth *health class* which can be offline with health protocols or online with social media, increasing interactive webinars with topic of adolescent health, and providing interesting reading regarding adolescent health. The sufficient behaviour of adolescent caused by their characteristics,

attitude (awareness and lack of literacy), minimum of information, and unavailability of health facility.

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Original Research

Pornographic And Social Economic Exposure Affect The Age Of Menarch

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ABSTRACT

Background: Menarche is the first menstruation which occurs in middle age of adolescence before entering the reproductive period. Menarche can cause negative reactions in young women due to a lack of readiness and knowledge about personal hygine during menstruation, this is can cause of UTI (Urinary Tract Infection). Asserted that the factors that influence menarche were nutritional status, exposure to mass media and fast food consumption. Media exposure to adolescents will enhance many aspects related to the sexual maturation of the adolescences. Aim of study is to determine the pornographic exposure and economic status in students.

Methods: A mix methods was match qualitative and quantitative research, the samples of the research used were 47 people, they were taken using purposive sampling technique.

Results: The results of this research showed that the age of menarche which occurred were8 to 12 years old. Factors associated with the menarche were socioeconomic status (p-value 0.020) and exposure to pornography (p-value 0.037).

Conclusion: Pornographic and socio economic status affect the age of menarchthe results can be used as material for consideration to provide early reproductive health education and supervise children in using cellphones and internet access.

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INTRODUCTION

Menarche is an important thing for a woman who shows signs of the formation of hormones secreted by the hypothalamus then passed to the inner reproductive organs that are in the ovaries and uterus(Sukarni & Wahyu, 2013). According to the World Health Organization (WHO), early menarche allows young women to get to know sexual life more quickly so that they are at risk of getting pregnant and facing the role of mother more quickly, while late menarche also has an impact on slow physical maturity, both hormones and organs, in addition to slow menarche in Long term will increase the

risk of osteoporosis because of the slow production of estrogen which will affect bone mass(Amaliah et al., 2012).

Riskesdas results in 2010, based on reports of respondents who have experienced menstruation, the average age of menarche in Indonesia is 13 years (20.0%) with an earlier incidence at the age of less than 9 years (0.3%), which is slower until the age of 20 years (0.3%). National data 37.5% menarche occurs at the age of 13-14 years(Kemenkes, 2010). Based on Febrianti, (2017)menarche influenced by nutritional status, exposure to mass media and fast food consumption. Media exposure in adolescents will improve many aspects related to the development of adolescent reproductive organs, they receive impulses from outside, in the form of soap operas featuring children playing adult roles, films about sex (blue films), reading books (novels) and magazines with pictures of sex, disorders of the opposite sex, and accidental viewing of sexual activity.

The stimulation is transmitted to the cortex and then channeled to the hypothalamus, causing the formation (GnRH) of stimulating the anterior pituitary resulting in follicle Stimulating Hormone and Luteinzing Hormone sending signals to the ovaries to produce estrogen hormones that cause changes in secondary sex organs, including hair distribution, fat tissue deposit, and eventually endometrial development in the uterus. Continuous estrogen stimulation in the endometrium eventually comes out the first bleeding called menarche (Guyton & Hall, 2007; (Rahmah, 2016). The rapid development of technology requires its users to be able to take advantage of it, the age of menarch which is influenced by many things, one of which is the development of mass media access that needs to be developed more broadly to prepare children to face menarch with the support of those closest to them.

Based on the results of interviews by researchers, out of the 81 students interviewed, there are 54 students who have had menstruation, at the age of 9, 10, 11 and 12 years and all children have smartphones. Purpose of study is to determine correlation between pornography exposure and socioeconomic with age ofmenarche in students.

MATERIALS AND METHOD

This type of research is a quantitative and qualitative match method. The research sample was 47 of the 54 population of students who had experienced menarche, the sample was taken by purposive sampling with Inclusion criteria: grade IV, V and VII students who have menstruated, students who are still active and willing to be respondents, while exclusion criteria are: students who have dropped out of school, students who are sick so they are unable to fill out questionnaires during research.

In the quantitative method of respondents assessment of the level of exposure to pornographic mass media, the questionnaire used refers to instruments that have been used previously with a data validity and reliability value of 0.841 to see mass media exposure, by giving as many as 8 questions about what respondents saw in negative media content.

Questions include pornographic content on audio, visual and audio visual media (Rahmah, 2016). As for the socioeconomic status factor, it is measured by the minimum wage standard for the City of Mataram in 2019. This research has received an ethical clearance from STIKES YarsiMataram number 14/Kep/STIKES/1/2020, and has received a research permit from Public Elementary Schoolno .7 Univariate and bivariate quantitative data were analyzed by Chi-Square whereas.

The qualitative method is carried out using an in-depth interview approach to students as first informants, triangulation technique is carried out by confirming data from students to the guidance counseling teacher and class teacher.

RESULTS

Tabel 1. Frequency distribution of respondents characteristics based on age and class at Mataram Public Elementary Schoolno.7 in 2020

Demographic Characteristics	Amount	Persentage %
Age		
10 years	7	14,9
11 years	23	48,9
12 years	17	36,2
Class		
IV	2	4,3
V	33	70,2
VI	12	25,5
Total	**47**	**100**

Based on the table above, obtained the highest age data is currently 12 years of age which is as much as 36.2% and the lowest age is the age of 10 years as much as 14.9%. Based on the table above also obtained the most respondent data in class V as much as 70.2%).

Univariate analysis / quantitative analysis

Table 2. Distribution of respondents' frequencies by age category, socioeconomic status, pornography exposure, at MataramPublic Elementary Schoolno.7 in 2020

Univariate analysis	Amount	Percentage (%)
Menarche age		
< 10 years	14	29,8
≥ 10 years	33	70,2
Socioeconomic status by wage standard		
Low	15	31,9
High	32	68,1
Pornography exposure		
Light	26	55,3
Weigh	21	44,7

Based on the table above obtained data as many as 14 people (29.8%) under the age of 10, while 33 people (70.2%) people over the age of 10. Based on the table above obtained data 32 people (68.1%) socioeconomic status, 26 people (55.3%) respondents exposed to light pornography mass media.

Qualitative analysis of pornography exposure

Qualitative analysis results describe the overall theme formed based on the results of the interview, during the data collection of this study presents 4 themes, namely:

Smartphone usage

Here's an excerpt of an interview conducted by a researcher.

"Yes, I play hp every day" (P1)

"I often play hp if I'm from the 3rd grade just got a hp bought papa" (P2)

Ownership of smartphones

Here's an excerpt of an interview conducted by a researcher.

"My own mobile phone was bought by mama, I was given a mobile phone just before entering school" (P1)

"my own phone used to fit class 4" (P3)

"hp have a papa but I wrote that pake because papa has two hp can be said this my hp anyway " (P4)

Parental assistance when the child uses a smartphone

Here's an excerpt of an interview conducted by a researcher.

"gk never accompanied, yes free so be kak" (P1)

"and from the beginning my parents never accompanied and did not forbid the hell to play hp anytime" (P3)

"no, it's just yourself if you play hp" (P4)

Exposure to pornography

Here's an excerpt of an interview conducted by a researcher.

"Korean drama i like but the old drama like the heirs, Phinocchio same suspicious partner if western movie I've seen Christian grey" (P1)

"most watch MV ajasih MV korea most like first 2PM the All day think of you (ADTOY), the song remains the most like the Give me reason by Pink, MV only once I watched it because it is interesting so hehe" (P2)

"Comics like to read it on webtoon read the secret of angel because handsome and beautiful pictures" (P4)

"never tried to read yesterday's novel malik and elsa" (P5)

Bivariate Analysis

Table 3. Socioeconomic status bivariate test and pornography exposure with age menarche of MataramPublic Elementary Schoolno.7 in 2020

Variable	Menarche age				Total		P-value
	< 10 years		≥10 years				
	N	%	N	%	N	%	
Socioeconomic status by wage standard							
Low	1	2,1	14	29,7	15	31,8	0,02
High	13	27,6	19	40,6	32	68,2	0
Pornography exposure							
Light	4	8,5	22	46,8	26	55,3	0,03
Weight	10	21,3	11	23,4	21	44,7	7

Bivariate test results obtained p-value value 0.020 then there is a relationship between socioeconomic status with menarche age, p-value value 0.037 there is a relationship between exposure to medi pornography and menarche age, in students at MataramPublic Elementary Schoolno.7.

DISCUSSION

The results of this study showed the age of menarche respondents between the ages of 8 to 12 years, where the most experienced menarche age 11 years (31.9%) and at least 8 years (4.3%). Menarche the first menstruation of the uterus which is the beginning of menstrual function and a sign of puberty in young women. Research conducted by Astuti, (2014) maulidah research, (2011), the factors that affect menarche are genetic, nutritional status, and habits such as sports activities. Research conducted by Astuti, (2014)showed that menarche occurs in children aged 10 to 13 years. While the research conducted by Yuliasari, Rosida and Wahtini, (2016), in high school students obtained the results of menarche age of respondents ranging in age from 10 years to 15 years. According to Wulandari, Aini and Astuti, 2016) the factors that affect menarche are genetic, nutritional status, and habits such as sports activities.

In contrast to the results of the study Diana & Cicih (2019), which is that there is no difference or influence of the menarche status of students exposed to pornography with students who are not exposed to pornography, it can be seen from the figure that there are 66.7% who are exposed to pornographic media already menarche while students who are not exposed to pornographic media there were 46.4% who had menarche (p Value p>0.05, namely 0.2400). This is different from theory. Because most children today have gadgets, it is possible to accidentally open pornographic content such as advertisements that appear when playing gadgets. In line with research Sinaga (2015), there is no significant relationship between pornography media exposure and menarche status with a p value of 0.111 (> 0.05), from several factors studied which mean age and BMI (body mass index)

The results showed that 68.1% of respondents had high socioeconomic status and 31.9 respondents had low socioeconomic status. In accordance with Harahap's research Harahap, (2017), also obtained data where the frequency of high socioeconomic status was 36.5%. High socioeconomic due to the income of parents who are more than the minimum wage of the city and also the work pursued by parents such as employers, lecturers or civil servants. Further analysis can be found that there is a relationship between socioeconomic status and age of menarche with p-value 0.020. In line with Laili and Malitasari (2016) that the higher socioeconomic status of parents increases the purchasing power of families in meeting basic needs such as nutrition and additional needs such as smartphone electronics and internet access so as to affect the age of menarche. Many in the community in their homes have been paired with Wifi so that the control of children in using Wifi facilities is not controlled.

There is a meaningful socio-economic relationship with the age of menarche. Children raised in high socioeconomic environments tend to be more fulfilled nutritional needs with children born and raised with low socioeconomic. Income in a family is often associated with how the family's ability to meet nutritional needs where it is related to the sexual maturation of adolescents (Lusiana, 2012). This is in line with research Kadri (2018), respondents who are socioeconomic low have a tendency of 28.50 times the age of menarche abnormal or menarche early.

In the results of the bivariate test obtained the results of p-value 0.037, it was concluded that there is a relationship between exposure to mass media and the age of menarche. In line with Herawati (2013), that the sooner children are exposed to negative content media, it will accelerate the coming of menstruation. In line with research conducted by Wulandari, Aini and Astuti, 2016) with a p-value of 0.000.

According to Yazia(2019),exposure to pornographic internet mass media causes students of SMPN 22 Padang to experience early menarche, which is less than 12 years old. However, students who are exposed to normal internet mass media have a normal menarche age of 12-14 years. In line with research R. Astuti & Handarsari (2010), there is a significant difference in the status of menarche ever or not students in seeing adult impressions / readings in suburban and downtown schools (p = 0.000), students who school in the city center are more often exposed to spectacle or adult reading compared to students who school in the suburbs.

Adolescents are exposed to pornographic mass media due to the ease of accessing pornographic information from various media such as smartphones and the internet. They get outside impulses, such as soap operas featuring children playing adults, films about sex (blue films), reading books (novels), temptations and stimuli from men, observations

Direct sexual activity that causes the release of estrogen hormones thus accelerating the maturity of reproductive organs such as endometrium which is the lining of the uterus. And finally there is the decay of the lining of the uterus so that the occurrence of menstruation / menarche (Guyton & Hall, 2007). The slowness of sexual maturity varies not only by the frequency of fast food consumption (affecting nutritional status) but can also be determined by emotional stress, hormonal disorders and physical activity.

CONCLUSION

There is a significant association of fornographic exposure (p-value 0.037) and socioeconomic status (p-value 0.020) with menarche age. Children who are exposed to pornography and high socioeconomic menstruation are faster. For all relevant parties such as the Health Office, schools and parents, it is important to provide sex education faster and supervise children in using mobile phones both at school and at home

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Original Research

Contraceptive Use Among Women Of Reproductive Age And The Number Of Ideal Children In West Java

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ABSTRACT

Background: The use of contraceptives for couples of childbearing ages is influential on the birth. More children born means the more spending to support the children, and eventually impacting the health of the children. The perspective on the ideal number of children for parents is influenced by demographic, social and economic conditions. This study examines the extent of the relationship between demographic conditions, contraceptive use, and access to family planning services to the ideal number of children among couples of childbearing age in West Java Province.

Methods: This type of research is analysis of an existing dataset. This study uses the 2017 IDHS data and the sample population is women of reproductive age 15-49 years who are registered in the IDHS in West Java Province. Data processing were conducted on August-November 2020 using chi square data analysis.

Results: The results showed that there was a relationship between the use of contraceptives and the ideal number of children (p-value 0,032). On the other hand, other demographic and social economic variable of the couples of childbearing ages: education (p-value 0,076), knowledge of contraceptive (p-value 0,737), wealth (p-value 0,489) and health information (p-value 0,413) shows no relationship with the ideal number of children.

Conclusion: Among demographic and social economic variable of the couples of childbearing ages, only contraceptive use shows a relationships with ideal number of children. In order to reduce fertility rates, more campaign regarding family planning especially for couples of childbearing ages, religious leaders, the customs and the community leaders are needed.

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INTRODUCTION

According to The Law of Republic of Indonesia No.52 of 2009 on population development and family development, the National Population and Family Planning Board (BKKBN) has the duties in population controlling and the family planning program implementation. One of the BKKBN functions in population controlling is determining the estimation of population control on the national level (Undang-Undang No. 52 Tahun 2009 Tentang Perkembangan Kependudukan Dan Pembangunan Keluarga, 2009). Hence, the provincial and municipals/regency are authorized in preparing the population and family planning parameters and utilizing population projection data for regional development.

One of those planned regional development is population controlling and birth controlling under the Indonesian family planning program. However, the gaps of married age remain in the recent Marriage Law No.16 of 2019 which allows marriage for girls under 19 years (the legal age) under special circumstances, referring to the Marriage Law No.1 of 1974 (Undang Undang Republik Indonesia Nomor 16 Tahun 2019, 2019). In fact, according to data from the Indonesian Demographic and Health Survey (IDHS) in 2017, 10% of female adolescents aged 15-19 have given birth or are pregnant with their first child.

Meanwhile, pregnancy at a late age increases the risk of bleeding, obstructed labor, and congenital defects. In addition, maternal health declines with increasing age, making it very prone to complications during pregnancy and childbirth. The contraceptive prevalence rate (CPR) in Indonesia according to the 2017 IDHS results is 63.4%, this shows an increase of 2.5% compared to 2012 which only reached 61.9%. The CPR target in 2019 is 66% (Oktriyanto et al., 2020). The increase in CPR coverage is inseparable from contraceptives that are easily available at the closest health facility and the existence of a private contraceptive provider, where families are willing to use their own costs to obtain contraceptives.

An adequate understanding of women for contraceptives results in the awareness to regulate births in order to improve the quality of the family by having the ideal number of children which are healthy, prosperous and educated (Elidasari et al., 2016; Megatsari et al., 2018). Furthermore, access to contraception through government and private health providers is now easier as it spreads both in the cities, in rural areas and even in remote areas (Fahmi & Pinem, 2018). The factors that contribute to the birth rate are the use of contraceptives that based on an individual background (length of marriage, education, age, number of children, occupation); family planning program (knowledge of family planning, informed consent and informed choice), environmental factors (information media provider's role, partner's role) and the factors of means (cost, place of service and availability of contraceptives) (Susmini & Ismiati, 2016).

The number of children is closely related to the family planning program because one of its missions is the creation of a family with the ideal number of children, namely two children in one family. Therefore, the population control plays a vital role as the contraceptive methods that were used among couples of childbearing age might vary, and those various contraceptive methods has different effectiveness. For example, the long-term contraceptive method which has a higher level of efficacy compared to short term contraception (Handayani & Najib, 2017). Factors mention above potentially hinders the effort on equalization and welfare improvement of human resources quality in Indonesia, as the development of national health aims to achieve the highest degree of public health by raising awareness, willingness, and the ability to live healthy for all.

Therefore, to accomplish the highest degree of public, the development of health requires an effort of all potentials of the Indonesian, both public and private. With the high birth rate in West Java Province, the goal of health development will be difficult to achieve, as the more children born, the more costs will be spent to support the child (Saraswati et al., 2018; Tyas et al., 2018). Thus, health development will also face problems, such as higher cost in supporting child life.

Inadequacy in fulfilling the life supporting cost results in the occurrence of morbidity such as infectious disease malnutrition and stunting. To avoid child health and welfare problems, the family planning program implemented by the government aims to reduce the birth rate and the creation of an ideal number of children in one family through contraceptives use. Moreover, contraceptive use is a useful means to delay/ prevent unwanted pregnancy. Based on the problems above, researchers examined the relationship between the use of contraceptives in women of childbearing age 15-49 years in West Java Province to the number of ideal children.

MATERIALS AND METHOD

This study implemented a cross-sectional design using secondary data of the 2017 Indonesian Demographic and Health Survey (IDHS). Descriptive statistics was used to display characteristics of participants. Categorical data was presented using frequency and percentage. Bivariate analysis using the Chi-Square test was performed to assess the association between dependent variable and each of independent variable. Significant association was determined if p-value <0.05.

The risk factors analyzed in this study were limited to the variables available in the SDKI questionnaire in 2017, which included maternal demographic characteristics (education, employment, income), knowledge of contraceptive methods, and access to information about contraceptive services. The population in this study is all women of childbearing age in West Java Province. The sample was women of reproductive age (15-49 years old) and ever been married who were the participants of IDHS 2017, with as much as 737 women. This research has been approved by ICF International No. 132989.0.000.

RESULTS

Table 1. Characteristics of Women of Childbearing Age in West Java Province

Characteristics	Frequency	
Number of children	n	%
Ideal	553	75.0%
Non- Ideal	184	25.0%
Contraceptive use		
User	488	66.2%
Non-User	249	33.8%
Mother education		
High	314	42.6%
Low	423	57.4%
Knowledge		
High	737	100%
Wealth index		
High	526	71.4%
Low	211	28.6%

Characteristics	Frequency	
Access to health information		
accessible	697	94.6%
inaccessible	40	5.4%
Total	**737**	**100%**

Table 1. shows that majority if the women of childbearing age in West Java are having the ideal number of children (75%), are currently using contraception (66.2%) and are in the higher wealth index (71,4%). Almost all the women deemed that health information is accessible (94.6%). However, more than half of the women of reproductive age in West Java are having low education (57.4%).

Table 2. Analysis of Contraceptive Use in Women of Childbearing Age with The Number of Ideal Children in West Java Province

Variable	Ideal number of children						P-Value
	Ideal		Non- Ideal		Total		
	n	%	n	%	n	%	
Contraceptive use							
Yes	377	77.3%	111	22.7%	488	100%	0,032
No	176	70.7%	73	29.3%	249	100%	
Education							
High	223	70.9%	91	29.1%	312	100%	0,076
Low	330	78.0%	93	22.0%	423	100%	
Knowlegde of contraceptive							
High	553	75.0%	184	25.0%	737	100	0,737
Wealth index							
High	394	70.9%	132	29.1%	526	100%	0,489
Low	159	75.4%	52	24.6%	211	100%	
Access to information							
Accessible	524	70.9%	173	29.1%	697	100%	0,413
Inaccessible	29	72.5%	11	27.5%	40	100%	

The table 2. describes that as many as 377 women of childbearing age in West Java Province using contraceptives are having the ideal number of children and as many as 176 women of childbearing age in West Java Province who do not use contraceptives that have the ideal number of children. Data analysis obtained p-value of $0.032 < 0.05$ which means there is a relationship between the use of contraceptives and the number of ideal children in West Java Province. Moreover, the table 2. describes as many as 223 women of childbearing age in West Java Province which are highly educated children who have the ideal number of children and as many as 330 women of childbearing age in West Java province who have low education who have the ideal number of children.

Data analysis obtained p-value $0.076 > 0.05$ which means there is no relationship between mother's education and the number of ideal children in West Java Province. In the table 2. describes as many as 394 women of childbearing age in West Java Province of high economic status who have the ideal number of children and as many as 159 women of childbearing age in West Java Province of low economic status who have the ideal number of children. Data analysis obtained p-value $0.489 > 0.05$ which means

there is no relationship between economic status and the number of ideal children in West Java Province.

In the table 2. describes as many as 524 women of childbearing age in West Java Province are having the access to information that has the ideal number of children and as many as 29 women of childbearing age in West Java Province who cannot reach access to information that has the ideal number of children. Data analysis obtained p-value 0.413 > 0.05 which means there is no relationship between access to health information and the number of ideal children in West Java Province.

DISCUSSION

The study shows that 75% of the women of childbearing age in West Java are having the ideal number of children (2 children or less). This result is inline with previous study using Indonesia Demographic and health survey (SDKI) 2012 which shows that around 56.2% of women of reproductive age are having ≤ 2 children (Sary, 2018). Furthermore, the result of this study indicates that the numbers of women wanting two or less children in 2017 have increased compared to 2012.

Contraceptives Use and The Ideal Number of Children in West Java Province

The results of the study obtained p-value 0.032 < 0.05 which means there is a relationship between contraceptive use and the number of ideal children in West Java Province. The study found that the average respondent has an ideal number of children of two, and contraceptive use for birth spacing. This is because the respondents have implemented the family planning program, namely 2 children policy. The result indicates the relationship between contraceptive use and the number of children. there is a relationship between the use of contraceptives and the number of children born.

The result is in line with previous study which states that there is a relationship between the use of contraceptives and the number of children born (Fitri et al., 2016) and the study of Hadiyanto (2017). Who found that in addition to create quality families through promotion and protection of reproductive rights, the family planning program also maintain the implementation of services related to arrangements and support in forming a family through arrangement of the ideal number of children, birth spacing and limiting, as well as an ideal age for childbirth. The number of children is closely related to the family planning program because one of the missions of the family planning program is the creation of an ideal number of children in the family, namely two children in one family.

When the number of children is considered ideal, the women tend to use contraceptive as the women are generally give more awareness that the sex of the child is not as important. The number of children is also closely related to the level of family well-being. In families with high levels of well-being generally put more importance on the quality of children than its quantity (Jelita, 2018). This research is in line with research conducted using 2017 Indonesian Demographic and Health survey (SDKI) which states that the use of contraceptives in couples of childbearing age will affect the ideal number of children, where couples of childbearing age who use contraceptives have the ideal number of children as the results of research that have been done (Herowati & Sugiharto, 2019).

Other study shows that that there is an increase in the percentage of contraceptive user respondents responding to the number of children (13.2% among family with 1-2 children; 23.7% among family with 3-4 children and 66.7% among family with more

than 4 children), so it can be concluded that the more children the respondent has leads to the higher the use of long-term contraceptive methods (Dewiyanti, 2020). The number of children is related with the use of contraceptives because the number of children is one of the factors that determine the couple's choice to use contraceptives (Jelita, 2018). The number of children alive will provide women with experience and knowledge, thus the women can make the right decisions about which contraceptives to use (Maharani, 2020).

Therefore, having more children results in a greater tendency to stop fertility, hence making women more likely to choose a long-term contraceptive method. Thus, theoretically, contraceptive user who have more that 2 children (multipara) are recommended to use long-term contraceptives (Jelita, 2018). Research by Saraswati et al., (2018) shows a strong relationship between the length of time using contraceptives and the number of children born to women of reproductive age, with women who have used contraception for more than 10 have an average of 2.71 children, compared to 3 children per women who use contraceptives < 10 years, and an average of 3.9 children per woman whose use contraceptive for the shorter time.

To conclude, the length of contraceptive use is also possible to be one of the factors related to the number of children in West Java Province are afraid to use contraceptives and lack of knowledge about the types and benefits of using contraceptives.

Mother's Education and The Ideal Number of Children
The results of the study obtained p-value 0.076 > 0.05 which means there is no relationship between maternal education and the number of ideal children in West Java Province. In West Java Province there are still families of couples of childbearing age (*PUS*) who have higher education show no significant differences with a lower education regarding to having more than more than two children. The results of this study agree with another study using 2018 DHS also shows that educational factors showed no relationship with the use of hormonal contraception (Herowati & Sugiharto, 2019).

Another study conducted in Calling Village, Natar District, South Lampung Regency also shows that even if there is a very strong relationship between education level and use of contraceptives with the number of children born to women of reproductive age, the study result shows a rather low relationship between education and number of children (Fitri et al., 2016). The result shows a contrary with previous research by Saraswati et al., (2018) which shows that there is a strong relationship between the length of education and the number of children born, with a negative correlation coefficient, which means that the lower the length of education for women leads to the higher the number of children born to women in eligible and fertile age group with an average of 2.43 children per woman who study >10 years compared to an average of 3.86 children per women who study < 10 years.

Length of education is one of the non-demographic factors that affect fertility because it relates to the knowledge of couples of reproductive age about the benefits and objectives of family planning programs. Thus, the length of study is by means related to birth planning that reduce fertility rates and improve the quality of the population. Women with a higher education are expected to perceive a small-family objectives and supporting the goals and benefits of family planning programs. With the understanding of the family planning program that is to achieve a small family with better quality of

children, women of childbearing age are willing to carry out family planning programs (Ariesthi et al., 2020).

Education also affects the knowledge of the right age to plan a pregnancy. A low level of education or length of education allows a woman of reproductive age to marry at an early age. This will increase the chances of births in one family and become the reason of the increasing birth among teenage girls (Zakaria, 2020). An increase in the level of education will results in a low birth rate because education will affect the negative perception of the child's value and will suppress the presence of large families. Parents wants of their children qualification in the hope of continuity of the ideals of the family in the future, children contribution for society and the country, hence, education related to acceptance in terms of the selection of the types of contraceptives that will indirectly affect the continuity of their use (Ariesthi et al., 2020).

Educational factor plays a vital role in decision making and receiving information. Education is one of the factors that determine a person's knowledge and perception of the importance of a thing, including the importance of participation in family planning program. The capability of reading and writing facilitates the dissemination of information about contraceptives, and also form the basic understanding of the various ways of limiting birth and whether the contraceptive works, what are the advantages of each contraceptive methods and its limitation (Ariesthi et al., 2020).

Female education will affect the age of getting married, hence, females with higher education tend to marry at an older age, thus leads to a lower fertility. Moreover, Women with a higher education tend to have lower fertility rates because they generally use contraceptives. Research in Indonesia shows that highly educated and middle-educated women have fewer children than elementary school educated (Zakaria, 2020).

In addition, low-educated women and women in higher education are also showing a different point of view of child's value. Women with higher education are more likely to plan for fewer children. By planning the number of fewer children, it will be easier to improve the quality of the child itself so that the care and fulfillment of rights such as nutrition and proper education will be more easily fulfilled (Sari & Yulnefia, 2019).

Contraceptive Knowledge and the Ideal Number of Children

The results of the study obtained p-value 0.737 > 0.05 which means there is no relationship between knowledge of contraceptives and the number of ideal children in West Java Province. Based on the existing data, it is known that there are still many families of couples of childbearing age who have more than two children despite the encouraged birth control program which is one of the government's efforts to overcome the population problem. A study by Dewiyanti (2020) indicates that knowledge of using contraceptives is not always related to the number of children born, it can be seen in the results of the study that respondents who have good knowledge of having children are not ideal and vice versa respondents who have low knowledge but have the ideal number of children.

Knowledge of contraceptives is essential for the wisdom of lowering fertility rates both through delays in mating age and family planning. The decrease in fertility rate will indirectly affect the amount and quality of human resources (Maharani, 2020). Knowledge is the result of 'knowing' after a person performs sensing of a particular object. Knowledge is a very important factor in shaping a person's actions because

behaviors based on knowledge will take longer than behaviors that are not based on knowledge.

However, the formation of health behaviors in contraceptive use is not only influenced by predisposing factors such as knowledge, but also be followed by enabling factors or possible factors such as the availability of infrastructure or health facilities for the community such as officers and health facilities. To behave healthy the community needs advice and supporting infrastructure, as well as reinforcing factors or driving factors such as community leaders, religions, customs, husbands and friends (Maharani, 2020). According to researchers, contraceptive use with the aim of having an ideal child is not only influenced by knowledge factors alone, but also difficulty in choosing contraceptive methods. Difficulty in choosing contraceptives is not only caused by the limited options, but also the disadvantages that women might face including the women's health status, the side effects of contraceptive methods, consequences for unwanted pregnancy, husband support, religious norms regarding the use of contraceptives and cultural norms regarding the ability to have children.

Economic Status and the Ideal Number of Children

The results of the study obtained p-value $0.489 > 0.05$ which means there is no relationship between economic status and the number of ideal children in West Java Province. However, the families with a high economic status (higher incomes) in this study tended to have fewer children than families with lower economic status incomes. A big increase in spending will reduce the demand for child, because each child's requires cost, and, therefore each child are directly related to expenses. Another study conducted by Setiawati and Nurhayati (2020) shows that families with high economic status usually prefer quality over the number of children.

Parents who emphasize on the quality of the child will then sacrifice the desired number of children. With high income, parents will provide education and skills (music courses, english lessons, etc.) to the child as best as possible, compared to the parent of the low income. So, the couples with a higher economic status will have fewer children than the lower-income spouses, but spend more money on children compared to the lower economic status (Setiawati & Nurhayati, 2020).

Demographic transition theory has a main rationale that is widely known, namely along with the development of socioeconomic sector, fertility is defined as an economic rather than biological process. In terms of economy, children can be considered as consumed goods that provide satisfaction. Economically the number of children is influenced by family income, the cost of having children, as well as preference. Various methods of fertility control such as delays in marriage, scheduled intercourse and contraception use can be used by the married couples during their productive age, assuming that the number of children will add the economic burden, and therefore inhibits the level of social and material family welfare (Utomo & Aziz, 2020).

Consumer behavior theory explains that everyone (in this case parents) has limited resources and each parent will try their best to get satisfaction by choosing between various goods. Their choices are influenced by the price of goods and their income. By increasing their income, parents want their children to have a higher education, so that they focused more on 'the quality of the child than the quantity of children'. Other approaches that are in line with the situation in developing countries is that children are deemed as an investment goods or as economic assets. These benefits will be seen if the child works without wages to help parents in the rice fields or in family-owned

companies. Also, the parents benefited if the children spent some of his income for parents or help the parents' finances at dusk (Herawati et al., 2018).

Access to Health Information and The Ideal Number of Children

The results of the study obtained p-value 0.413 > 0.05 which means there is no relationship between access to health information and the number of ideal children in West Java Province. Among the families who have received visits and counseling from family planning officers (PLKB, Pos KB / Sub Pos KB / Kader KB, and health workers), the number of children desired tends to be fewer than among the families who never get visits from the family planning officers. The role of family planning officers in providing motivation and socialization to the community regarding the norms of happy and prosperous small families (*NKKBS*) is one of the spearheads of the success or failure of population and family planning (*KKB)* programs in the community.

Moreover, the information relates to women's participation in family planning program as in contraceptive use among women of childbearing age increases as the women in the family receive information. Couples who have listened to information about various birth control and the benefits of the contraception are more likely to participate in contraceptive use compared to women who never get information about contraception. Therefore, the health officials should improve counseling in providing information about the right target of contraceptive use which is to couples of childbearing age (Kursani & Salmi, 2017).

The distance and the availability of adequate facilities also contributes to make it easier for people to check their health so that it is easier to be treated if any emergency occurs. Therefore, puskesmas (community health center) plays a vital role in improving the quality of the community in the health sectors. The reaching distance to the location of puskesmas is one of the important things that need to be considered to improve health services. Thus, adequate puskesmas does not only mean the number of services provided, but also considers the level of accessibility (Wardani et al., 2019).

Counseling provides information to prospective family planning participants (contraceptive users) about the advantages and disadvantages of the contraception, so that the candidate and contraceptive user participant are well prepared in determining their choice. The information received during counseling also concludes about the type of contraceptive that corresponds to the condition of prospective contraceptive users (Raidanti, 2018). Achieving success in the implementation of the Family Planning Program is very dependent on the government's commitment, the quality of adequate human resources, especially family planning field officer (*PKB/ PLKB)*, the participation of community leaders and the targeted married couples. The role of husband and wife in efforts to control the population is through decision making to have children and how many children they want (Wardani et al., 2019).

In addition to the important role in supporting decision making, the role of husbands in providing information is also very influential for the wives. Spouse's supporting roles are taken into many forms such as participating in consultations with the health workers before contraceptives installation, reminding the wife of the schedule of taking the oral contraception or reminding wives of the schedule for contraceptive control. Husband can also reminds the wife of things that should not be done when using contraceptives and so on, and that roles will greatly help the spouse to realize that reproductive health matters to both spouses, and, are not only the women's affairs. The

husband's other role is to facilitates in terms of giving all the wife's needs regarding to her reproductive health problems.

This can be seen when the husband provides time to accompany the wife during contraceptives installment and contraceptive controls where the husband is willing to provide special costs to install contraceptives, and help the wife determine the appropriate place of service or health workers (Hinda, 2016; Raidanti, 2018).

CONCLUSION

Analysis of the results of this study illustrates that there is a significant relationship between the use of contraceptives at childbearing age and the number of ideal children in Java Province Barat. Further research should be directed to the health of child at birth because now the National Population and Family Planning Board (BKKBN) focused on the number of born children, as well as the child health.

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Systematic Review

The Effect Of Endorphin Massage On Milk Production In Postpartum Mothers

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ABSTRACT

Background: *Low milk production in the first few days after delivery becomes constraints in early breastfeeding. The purpose of this research is to find out effect of endorphin massage on milk production in postpartum mothers.*

Methods: *Systematic review using the database: Google Scholar. The search results that meet the article criteria between 2017-2021, having minimum 20 sample, using keywords "massage, endorphin, ASI" are then analyzed for articles.*

Results: *From 17 article extracted, it showed that milk production can be improved by massage techniques such as endorphin massage.*

Conclusion: *To increased breast milk, it is advisable for postpartum mothers using massage therapy such as endorphin massage.*

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INTRODUCTION

The variety is excessive Infant mortality in Indonesia may be averted via breastfeeding (ASI) early and one of a kind breastfeeding. This is evidenced via way of means of World Health Organization (WHO) withinside the 2012 Indonesian Health Profile that IMR in Indonesia by and large associated with dietary factors, particularly 53%. Some of the ailments arising from malnutrition, among others, pneumonia (20%), diarrhea (15%), perinatal mortality (23%) which is actually a disease that can be prevented by breastfeeding since early stage.

The significance of giving breast milk to infants is contemplated withinside the hints World Health Organization (WHO) due to the fact 2010 which appealed to each mom offer extraordinary breastfeeding till the toddler is six months old. According to information from UNICEF, youngsters who're solely breastfed are 14 instances much more likely to survived the primary six months of existence than youngsters who did now no longer breastfed. Starting breastfeeding on the primary day after delivery can lessen the danger new child mortality as much as 45%. Even the WHO and UNICEF

recommend breastfeeding is given until the age of 24 months. One of the triggers for the inhibition of colostrum excretion is the lack of breast care (Alza & Nurhidayat, 2020).

In the manner of breastfeeding, there are 2 tactics that have to be considered, that are the discharge and manufacturing of breast milk. The manufacturing of breast milk is prompted with the aid of using the hormone prolactin whilst manufacturing is prompted with the aid of using the hormone oxytocin. The hormone oxytocin will be released by stimulating the nipple through the baby's mouth or through massage to the mother's spine. The purpose of endorphin massage is to provide calm, relax, reduce pain and love the baby more so that the oxytocin hormone will be released through the flow of breast milk (Anuhgera et al., 2019).

The manufacturing of colostrum is motivated with the aid of using the hormone oxytocin, the hormone prolactin, and permit down reflexes. The more often the mother breastfeeds, the more often and more breast milk is produced. Oxytocin is very important for the smooth flow of breast milk. Optimal breastfeeding practice is the most effective intervention for improving the health of both mother and baby. Studies show that breastfeeding can prevent neonatal infections and mortality by 45%, diarrhea by 30% and deaths in 18% in children (Anuhgera et al., 2019).

Low milk manufacturing withinside the first few days after transport turns into constraints in early breastfeeding. Mothers who do now no longer breastfeed their toddlers on days the primary is because of tension and worry of a loss of milk manufacturing in addition to the mother's lack of know-how approximately the breastfeeding process. One of the approaches to growth milk manufacturing in post-partum mothers, specifically with endorphins rubdown that's a way of contact and mild rubdown across the neck, lower back and arms. Developed first by Constance Palinsky used to manage pain. This technique can be used to reduce pain during childbirth, normalizes heart rate, and blood pressure, increases relaxed state in the body by triggering a feeling of comfort through the surface of the skin and prevent postpartum stress (Alza & Nurhidayat, 2020; Mayangsari & Hidayati, 2020).

Endorphin Massage is a light massage that gives a comfort effect to the mother. The light touch that is given to the neck, back and arms during the endorphin massage will stimulate the hypothalamus to release endorphin hormones which will help release the oxytocin hormone to accelerate colostrum excretion. So far, the use of endorphin massage is widely used for pain management, anxiety during childbirth, and to help with uterine involution.

Endorphin massage is a mild stimulation of the neck, arms and back from the ribs to 5-6 extending both sides of the spine to the scapula which will accelerate the work of the parasympathetic nerves, nerves originating from the medulla oblongata and in the sacrum area of the spinal cord, stimulating posterior pituitary to release oxytocin, oxytocin stimulates ion-contracting of smooth muscle cells that surround the mammary glands causing myoepithelial contractions of the breast so as to increase milk production from the mammary glands (Anderson, Kynoch, Kildea, & Lee, 2019; Baiq Eka Putri Saudia, 2017; Widhiani, Murni, & Suseno, 2019).

Based on the Ahluwalia report, massage therapy can reduce cortisol levels. Systemic changes in blood pressure levels can occur via neurological or endocrine methods. This is certainly very supportive of the condition of post-caesarean section mothers in giving colostrum. The application of complementary therapies with simple and inexpensive techniques can help patients overcome the problem of breastfeeding so that mothers in breastfeeding will feel happy and happy. (Ahluwalia, Li, & Morrow,

2012).

The massive abundance of studies relating to endorphin masgae has increased strikingly over last few decades. So, it needs to do systematic review to see and compare the effect found in a study with the effects that have been found in previous studies in the respective area of research. The aim of this studies is to discover impact of endorphin rubdown on milk manufacturing in postpartum mothers.

MATERIALS AND METHOD

This studies technique is systematic review, used 8 stages, specifically figuring out questions, figuring out inclusion and exclusion criteria, literature search, article selection, carry out vital appraisal, carry out information extraction, information synthesis and map the consequences findings. Sources of studies information derived from the literature via the net withinside the shape of studies consequences acquired approximately massage, endorphin, ASI. Article inclusion standards used: 1) An article that describes the endorphin rub down on milk manufacturing in postpartum mothers. 2) Published articles have whole sections. 3) Published in 2017-2021. The exclusion standards for articles included: Incomplete article composition.

The seek became achieved the usage of the Google Scholar database the usage of keywords: "massage, endorphin, ASI". The articles that seem are then taken care of in order that no articles with the identical identify are found. Then the articles have been taken care of primarily based totally at the inclusion and exclusion standards that were determined. Articles that encompass abstracts handiest may be eliminated. So that we get the articles to be analyzed.

The articles which have been received are then extracted. Extraction of articles is primarily based totally on the writer of the item, the year the item became published, the quantity of samples used, the measuring device used, the effects of the studies conducted, and the item database. After getting the item that became reviewed, the author made a vital appraisal and degree the stop is charting the data. Filtering and choice of articles the usage of PRISMA Flowchart.
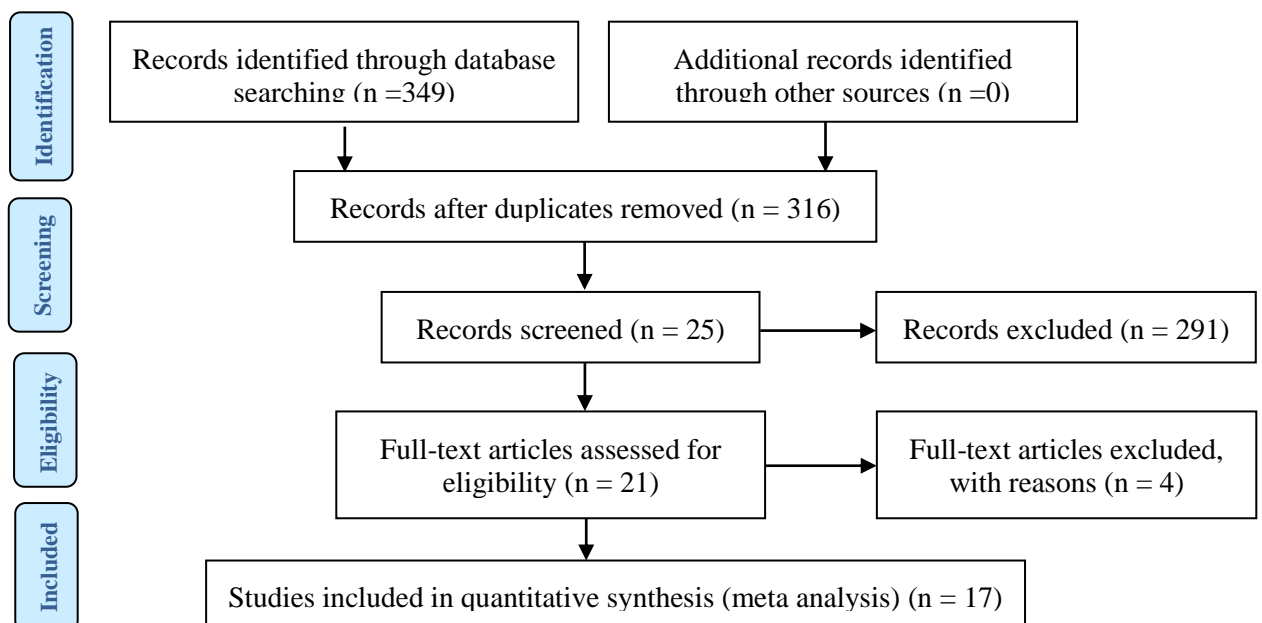
Gambar 1. Prisma Flow Diagram

RESULTS

Search outcomes the use of the key phrases "massage, endorphin, ASI" use the digital Google Scholar database. Search outcomes the use of those 3 key phrases ended in 349 articles. Then filtering the articles with inclusion and exclusion standards become received 25 articles. Selection of the following article through getting rid of article duplication with the end result of 21 articles. Subsequently, article removal become achieved primarily based totally on a whole association of 17 articles.

Based on systematic review on some search of endorphin massage on milk production in postpartum mothers as follows: (Anuhgera et al., 2019) combine breast care, endorphin massage and combination of breast care and endorphin massage to post section-cesarea mothers. Showed an analysis of the effect of endorphin massage on breast milk production in postpartum mothers (Alza & Nurhidayat, 2020; Baiq Eka Putri Saudia, 2017; Pertami, Rahmawati, Malang, Ijen, & Malang, 2020; Pratimi, Ernawati, & Saudia, 2020; Tutik Hidayati, 2019; Wahyuningsih & Rohmawati, 2018). Combine back rolling and endorphin massage (Dewi, Indrayani, & Khanifah, 2017; Mayangsari & Hidayati, 2020). Compare oxytocin and endorphin massage and sugestif (SPEOS) (Nugraheni & Heryati, 2017; Rukmawati, Astutik, & Retnoningrum, 2020; Sari, Rahayu, & Rohmayanti, 2017; Syukur, Wahyutri, & Putri, 2020; Widhiani et al., 2019; Wulandari & Mayangsari, 2019). From 17 article extracted, it showed influential to boom the easy manufacturing of breast milk.

Table 1. Article Extraction

Researcher	Year	N	Result
Diah Evawanna Anuhgera, Eka Fitria Panjaitan, Desika Wali Pardede, Nikmah Jalilah Ritonga, Damayanti	2019	48	There had been forty-eight individuals decided on the use of purposive sampling, with 18 assigned in breast care, endorphin rub down and mixture of breast care and endorphin rub down. The time of spending colostrum expenditure is classed each day whilst the quantity of colostrum expenditure is classed after intervening. Analysis of the statistics used is one-manner Annova. The outcomes confirmed that the mixture of breast care and endorphin rub down turned into the best movement withinside the time of spending colostrum and the quantity of colostrum with a cost of p = 0,000. The mixture of breast care and endorphin rub down can be carried out as an opportunity remedy post-cesarean mother.
Nurfaizah Alza, Nurhidayat	2018	34	The results showed that the number of subjects based on the

Researcher	Year	N	Result
			ASI production posttreatment group after the endorphin message method showed that the number of subjects with ASI production was as smooth as many. There is an effect of endorphin message with breast milk production in post-partum mothers obtained Z value of -0.05.
Baiq Eka Putri Saudia, Ni Nengah Arini Murni	2017	40	The results of the study found: There was a significant effect of endorphin massage on increased milk production (p = 0.000) and decreased EPDS score (p = 0.000).
Masning, Firda Fibrila,Martini Fairus	2017	34	The results showed that the release of breast milk by endorphin massage was faster compared to what was not done, which was 94.12%, with an average expenditure of 2 days faster. The results of the Mann Whitney test showed a p value of 0,000 where the p value $< \alpha$ (0.05)
Dewi Mayangsaria, Sri Nur Hidayati	2020	20	Breast Milk Production Research Results in postpartum moms earlier than and after being given a rolling again rubdown withinside the intervention institution has the suggest 57.49, after 147.84. earlier than giving Endorphin rubdown has an average 50,135, after 107,071. There is a distinction among rolling again rubdown and breast milk manufacturing Endorphin rubdown on milk manufacturing withinside the intervention institution on the Tiara Gubug Primary Clinic Grobogan district p cost 0,000 and there are variations in rolling again rubdown and Endorphin rubdown of breast milk manufacturing in postpartum moms on the Tiara Gubug Primary Clinic, Grobogan Regency p cost 0,000.

Researcher	Year	N	Result
Sumirah Budi Pertami, Budiono, Ira Rahmawati	2020	175	The effects indicated variations among the 4 organization concerning the breast milk manufacturing and an growth in toddler weight with $p = 0, 00 <$ alfa $= 0, 05$ and $p = 0.046 <$ alfa $= 0.05$ respectively
Baiq Mei Asri Pratimi, Ernawati, Baiq Eka Putri Saudia	2020	30	The results showed that the production of breast milk before endorphin massage in the control group with a mean of 2667 and in the treatment group with a mean 2,400, the increase in breast milk production after massage in the control group was 3,267 with $p = 0.259$ and the treatment group with a mean of 4,933 with $p = 0.001$ ($p <0.05$).
Tutik Hidayati, Iis Hanifah	2019	40	The effects had been received after oxytocin rubdown ASI out quicker than now no longer carried out oxytocin rubdown. This observe used a pre-experimental layout with one organization pre-check post-check layout method. The populace is all moms who breastfeed toddler elderly 0-6 months. The sampling method used is general sampling. Data evaluation the use of Wilcoxon received the effects of $\rho = 0,000$, in order that $\rho <\alpha = 0.05$, then there may be the affect of the Application of Massage Endorphin and Oxytocin Method to Increased Breast Milk Production in Breastfeeding Mothers of Babies 0-6 Months in Gading Village.
Dyah Ayu Wulandari, Dewi Mayangsari, Sawitry	2019	30	The outcomes confirmed that the imply price of smoothness of breastfeeding withinside the intervention institution of oxytocin rubdown become 661.20 and withinside the intervention institution of endorphin rubdown 598.60, with a p price of 0.454>

Researcher	Year	N	Result
			0.05, which supposed that there has been no distinction withinside the smoothness of milk manufacturing withinside the intervention groups, so it may be concluded that the oxytocin rubdown and rubdown interventions endorphins are similarly influential to boom the easy manufacturing of breast milk.
Adinda Putri Sari Dewi, Eni Indrayani, Rina Khanifah	2017	44	The outcomes imply that there's a distinction in milk manufacturing among the intervention and the manage organizations with an OR of 0,2 (95% CI: 0,060 to 0,770). Parity and frequency of breastfeeding have enormous correlation with breast milk manufacturing. Mother's age, parity, work, obesity, and frequency of breastfeeding don't have any enormous correlation with breast milk manufacturing.
Diah Eka Nugraheni, Kosma Heryati	2017	30	The effects confirmed the technique SPEOS impact on milk manufacturing, common of 131.87 (p=0.00) and expanded little one weight, common of 483.30 g (p 0.00). Age and the meals fed on with the aid of using the mom at some point of the study (maternal nutrition) did now no longer have an effect on milk manufacturing, while IMD impact on milk manufacturing with 0.389 rectangular r (p 0.04). SPEOS techniques impact on milk manufacturing and an boom in child weight on postpartum mom in Bengkulu City in BPM.
Dewi Permita Sari, Heni Esti Rahayu, Rohmayanti	2017	38	Analysis end result for breast milk manufacturing earlier than and after remedy were given p value: 0,000. It way that there has been a distinction among earlier than and after remedy at the same time as

Researcher	Year	N	Result
			the end result of dimension of intervention organization and manipulate organization were given p value: 0,004 that means there has been a giant distinction among intervention organization and manipulate organization.
Elisa, Latifah Lely Septiariani, Kurniati Puji Lestari	2020	27	Breastfeeding production before mothers performed SPEOS method on average was 3.70 ml with standard deviation of 5,113. Breast milk production after mother performed SPEOS method on average was 129,63 ml with standard deviation 11,001. There was an influence of SPEOS method to breast milk production on postpartum mother at Maternity Hospital of Mardi Rahayu Semarang (p-value = 0,000).
Nursari Abdul Syukur, Endah Wahyutri, Erma Futri	2020	20	Combination massage is the best method to produce the highest amount of ASI because the largest Sig p value is (1,000) where the level is significant <0.05. So H0 this study was rejected means that there is a significant difference between the production of breast milk from the combination massage compared with the two-massage done separately
Luh Yunita Widhiania, Ni Nengah Arini Murnb, Mutiara Rachmawati Susenoc	2019	34	After the statistical test was carried out using the Independent T-Test significance value (p) of 0.043 <0.05. There are differences between the SPEOS Methods and Marmet Technique on Breast Milk Production for post-partum mothers in the work area Karang Pule Health Center.
Sefrina Rukmawati, Puji Astutik, Ambar Dwi Retnoningrum	2020	30	T-test results received p value = 0,000 ≤ α = (0.05), in order that Ha is accepted. There is a power of Method (Stimulation endorphin, oxytocin and suggestive) to boom milk

Researcher	Year	N	Result
			manufacturing and involution of the uterus in post-partum.
Endang Wahyuningsih, Wiwin Rohmawati	2018	40	Research result endorphin massage and breast care massage to smooth the production of breast milk in the mother childbirth as much as 28 (70%).

DISCUSSION

The formation of breast milk begins in pregnancy. During pregnancy changes occur breasts, especially the size of the breasts, which are caused by their presence proliferation of lactiferous duct cells and glandular cells for the formation of breast milk as well smooth circulation of blood in the breast, but the excretion of milk is inhibited by the hormone estrogen. Hence, it influences prolactin and secretion breast milk is more dominant at postpartum, namely on the second or third day because estrogen and progesterone levels have fallen dramatically.

Maternal psychological factors can also inhibit the let-down reflex or breastfeeding reflex, including stress, such as: confusion, instability, fear and anxiety. The mental state of the mother who is anxious and thoughts of stress, confusion, chaos can inhibit the process of the hormone oxytocin, let down reflex or reflex to release breast milk. Breast milk production continues, but output is hampered, causing a dam of breast milk (Alza & Nurhidayat, 2020; Pratimi et al., 2020; Syukur et al., 2020; Tutik Hidayati, 2019).

Colostrum production can increase and decrease depending on the stimulation of the breast glands, especially in the first week of breastfeeding. Factors that influence the smoothness of breastfeeding are frequency of breastfeeding, breast care, gestational age, stress and acute illness. Frequency of sucking is the factor most related to the smooth expulsion of colostrum. The frequency of breastfeeding is at least 8 times in 24 hours, the more often the baby is fed, the more colostrum production and secretion will be.

Oxytocin is a neurohypophysis hormone that links the causes and effects of positive social interactions. Oxytocin will induce the release of milk by myoepithelial contraction through the G protein receptors, activate phosphophilase and induce milk ejection so that the lactation inhibitor feedback decreases so that prolactin can be formed and milk production will increase for the next breastfeeding process (Anuhgera et al., 2019; Dewi et al., 2017; McClellan et al., 2012; Nugraheni & Heryati, 2017; Sari et al., 2017; Syukur et al., 2020; Wulandari & Mayangsari, 2019).

Postponement of Early Initiation of Breastfeeding (IMD) performed at cesarean section delivery has an influence on the process of lactogenesis. A study by Ahluwalia (2012) found that milk production in women with cesarean section was lower at 5 days post-partum compared to normal births. Breastfeeding in the first hour after birth is an important predictor for the continuation of the breastfeeding process. Delays in initiation of breastfeeding will affect breastfeeding ability, infant acceptance, milk production and short breastfeeding duration (Ahluwalia et al., 2012).

Total colostrum expenditure is only via way of means of evaluating the mixture of breast care and endorphin rubdown. That is, the consequences received via way of means of the common quantity of colostrum expenditure among the mixture of breast care and endorphin massages on endorphin rubdown may be 9.forty seven ml. From the

consequences received, the extra the price received, the greater colostrum expenditure withinside the mixture institution of endorphin rubdown and mixture of breast care with endorphin massages (Anuhgera et al., 2019; Wahyuningsih & Rohmawati, 2018).

Back massage causes it which spinal cord stimulation serves as a neural link between brain and peripheral nervous system. All communication up and down the cord spinalis located in the pathways (tracts) the ascending sensor which transmits the signal from afferent input to the brain. The substance of the grisea which is located in the middle of the spinal cord contains links between neurons which lies between the afferent input and efferent output and neuron cell bodies efferent. Afferent and efferent fibers are carrying signals to and from the spinal cord, it fuses into nerves spinalis.

These nerves are attached to the cord paired spinal cord along the cord. Inhibitoric neurons and cholimergic neurons excitatory makes synaptic contact with oxytocin neurons are secretory neurons in the nucleus paraventricular and supraoptic. Then the hypothalamus produces the hormone oxytocin and flowed towards posterior pituitary. Oxytocin leading to breast then the release of hormones oxytocin (Mayangsari & Hidayati, 2020; Nugraheni & Heryati, 2017; Pratimi et al., 2020).

Giving massage to the back is more effective than warm compresses to the breasts to increase milk production. This is because, moment massage of the back nerves will stimulate the release of endorphins in the body which indirectly will stimulate the oxytocin reflex. When given massage back, dorsal nerves will send signals to the brain to release oxytocin, which will cause contraction of myoepithelial cells which will encourage discharge of breast milk because the nerves in the breast are innervated by the dorsal nerves (dorsal nerves) which spreads along the spine. The massage effect can also increase serotonin and dopamine levels, which can lead to decreased discomfort, fatigue, stress and depression.

This condition is the same felt by the subject after doing back massage which is feeling relaxed and comfortable. Massage has both benefits physiological and psychological. The benefits of massage include creating a relaxation response, improve metabolic processes, improve lymphatic tissue function, accelerates healing and relaxation of muscles, reduces muscle tension and levels stress (Alza & Nurhidayat, 2020; Dewi et al., 2017; Elisa, Septiarini, & Lestari, 2018; Pertami et al., 2020; Pratimi et al., 2020; Rukmawati et al., 2020).

CONCLUSION

From this research it can concluded that milk production can be improved by massage techniques such as endorphin massage. The application of the endorphin massage method from 6 hours to 1 week to postpartum mothers is an appropriate type of intervention to be carried out in the hospital and at home for post-partum mothers in order to provide good colostrum to their babies. Therefore, future studies may also be enriched by experience or perception of the spouse in delivering the massages, especially endorphin massage.

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Original Research

Relationship Between A Premature Rupture Of Membranes And The Increase Of Leucocyte Levels In Pregnant Women During COVID-19 Pandemic

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ABSTRACT

Background: Premature Rupture of Membranes (PROM) is a condition in which the membranes rupture before women's delivery. The incidence of PROM in Indonesia is still quite high, around 4.5%-7.6% from all pregnancies. The incidence rate at DKI Jakarta in 2020 was 4.6% while at Pelni Hospital in the same year was 7.9%. The main cause of this incident was due to the occurrence of infection that spreads into the uterus and amniotic fluid as well as due to the inflammatory process. This causes arachidonic acid metabolism to be active so that the level of leucocytes in the blood being increase. The purpose of this study was to analyze the relationship between the incidence of PROM and leucocyte increasing levels at the Pelni Hospital during the COVID-19 pandemic in 2020.

Methods: The study had used analytic observational method with cross sectional approach. The number of samples were 97 people, done by simple random sampling technique, using Medical Records of respondents along year of 2020.

Results: Data showed the aged range of respondents were 20-35 years (79.4%); multigravida (53,6%); PROM (76.3%); respondents with method of delivery which done by cesarean section (71.1%); and respondents with PROM who experienced the increasing of leucocyte levels (80.4%). Results based on Chi-square test showed there was a relationship between PROM and increased leucocyte levels (p=0.036).

Conclusion: The relationship between PROM and the increasing of leucocyte levels to pregnant women at Pelni Hospital during COVID-19 pandemic in 2020 possibly caused by the presence of infections from ascending microorganisms.

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INTRODUCTION

One of the direct causes of mortality and morbidity in pregnant women is obstetric complications and is still the biggest problem in developing countries (Abrar et al., 2017). According to survey data conducted in 2015, the Maternal Mortality Rate (MMR) in Indonesia is 305 per 100,000 (Kemenkes RI, 2018). The MMR value is an indication of the health and welfare status of a country (Shirin and Nahar, 2013). Obstetric complications that cause 80% of maternal deaths are severe bleeding after delivery, hypertension in pregnancy and infection (WHO, 2017). Infections that occur in pregnant women can cause premature rupture of membranes (PROM) (Kemenkes RI, 2018).

PROM is a condition in which the amniotic membrane ruptures before delivery occurs (Poerwoko., et al 2018) . Clinical symptoms that can be observed in PROM patients are sudden discharge of amniotic fluid from the vagina which is colorless and smells fishy. Based on the gestational age of the rupture of membranes, PROM can be classified into two groups, namely PROM at term and preterm (Hailemariam Segni, 2017).

Based on the survey, the incidence of pregnant women with PROM is still quite high at 5-10% of all pregnancies (WHO, 2017). According to the results of a 2016 study by the American College of Obstetricians and Gynecologists (ACOG) it is known that the incidence of PROM is 8% of all pregnancies, while the incidence of PROM in Indonesia is 4.5%-7.6% of all pregnancies (Panjaitan dan Tarigan, 2018). There are various factors that cause PROM, namely general factors caused by infection, heredity or obstetric factors due to overdistention (Manuaba, 2010). Infection is the most common cause of PROM which then spreads to the uterus and amniotic fluid resulting in an inflammatory process (Sohail, 2012).

If PROM is suspected, it is necessary to conduct an assessment of PROM in the form of anamnesis, physical examination, supporting examinations and conducting a culture examination if infection occurs (Manuaba, 2010). This culture examination can determine the pattern of bacteria and resistance in determining the selection of antibiotics for PROM patients and babies born if there are signs of infection. Signs of infection in the uterus are cloudy color of amniotic fluid, smelly amniotic fluid and mother's temperature >38°C (Prawiroharjo, 2008), and an increase in blood leukocyte levels >10,000/mm³.

Leukocytes play an important role in the immune system. The main function of these leukocytes is as protection or defense of the body to fight infection (Karolina et al., 2016). When microorganisms enter the body, they will cause leukocytes, which normally live in the lymph nodes, to circulate into the blood to defend the body from germs that cause the number of leukocytes to increase (Sherwood, 2016). In 2019 there was an outbreak that spread rapidly, namely coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus (SARS-CoV-2) (Alfaraj et al., 2019).

Based on (Liu et al., 2020) that pregnant women are susceptible to SARS-CoV-2 infection which can increase the risk to pregnant women. Based on the above background, it is necessary to conduct research on the analysis of the relationship between the incidence of PROM with an increase in leucocyte levels which will be carried out at the Pelni Hospital during the COVID-19 pandemic in 2020 to increase knowledge of pregnant women's health and reduce mortality due to PROM in pregnant women.

MATERIALS AND METHOD

Instruments that used in this study is the medical records which seen in the period January-December 2020. The population in this study were all pregnant women >20 weeks at the Pelni Hospital Jakarta with a total population of 3,158 people. The sample in the study was seen according to the inclusion criteria, namely pregnant women who were recorded in the medical record, the exclusion criteria were the data was incomplete, there were other pregnancy complications (DM and hypertension) and the active phase at stage 1 so that a sample of 97 people was obtained by simple random sampling during the COVID-19 pandemic.

The independent variable in this study was premature rupture of membranes (PROM), while the dependent variable was an increase in leucocyte levels. The location of this research is at Pelni Pertamburan Hospital, West Jakarta with the time of conducting the research in May until June 2021. Data analyses in this study to see the relationship between the independent variable and the dependent variable using the chi-square test.

RESULTS

The characteristics of the sample in this study include the age of pregnant women, parity status, PROM classification, delivery method and leucocyte levels in pregnant women. The distribution of pregnant women at Pelni Pertamburan Hospital according to these characteristics is as follows:

Table 1. Characteristics of the Research Sample

Variable	Total (n=97)	Percentage (%)
Age		
<20 and >35 yo	20	20,6
20-35 yo	77	79,4
Gravida		
Primigravida	45	46,4
Multigravida	52	53,6
Classification of PROM		
PROM At term	74	76,3
PROM Preterm	23	23,7
Method of delivery		
Sectio caesarea (sc)	69	71,1
Normal	28	28,9
Increased leucocyte levels		
There is an increase in leucocyte levels (>10.000/mm³)	78	80,4
There is no increase in leucocyte levels (<10.000/mm³)	19	19,6

Table 1 showed the majority of pregnant women with PROM who are pregnant at the age of 20-35 years (79.4%), have multigravida status (53.6%), occur at gestational age >37 weeks or PROM At term (76.3%), sectio caesarea (71.1%) and there was an increase in leucocyte levels (80.4%).

Table 2. The relationship between a PROM and the rising of leucocyte levels at the Pelni Hospital in 2020

PROM	Rising of leucocyte levels		Total (%)	P-value
	There was an increase in leucocyte levels (>10.000 /mm³)	There was no increase in leucocyte levels (<10.000/mm³)		
PROM At term (37 - 40 weeks)	63 (85,1)	11 (14,9)	74 (100)	
PROM preterm (>20 - <37 weeks)	15 (65,2)	8 (34,8)	23 (100)	0,036
Total	78 (80,4)	19 (19,6)	97(100)	

Based on table 2, it can be seen that the p-value = 0.036 with asymp. sig < 0.05 which concluded that there was a significant relationship between PROM and leucocyte levels at Pelni Pertamburan Hospital in 2020.

DISCUSSION

The characteristics of the sample in this study can be seen in table 1. It is known that the majority of pregnant women who experience PROM at Pelni Hospital are pregnant at the age of 20-35 years which is included in the healthy reproductive age. This can occur due to various factors such as parity, fetal position abnormalities (Fitriyani et al., 2018), heredity, previous PROM history and genital infections (Hailemariam Segni, 2017) so that pregnant women who are classified as reproductive age are still at risk the occurrence of PROM.

This study is in line with research conducted by Ikrawanty (2019) which showed that the majority of pregnant women who experienced PROM occurred at the age of 20-35 years as many as 263 (95.6%) and as many as 12 (4.4%) pregnant women experienced PROM in Indonesia. age <20 and >35 years. However, the results of this study are not in accordance with the theory explained by Cunningham (2014) that pregnant women who are pregnant at the age of 20-35 years are the safest age to give birth to children because their reproductive organs are functioning optimally so that the risk of PROM is very small.

Based on the data obtained in table 1. pregnant women who experience PROM with multigravida status more than primigravida. This study is in line with previous research by Abrar et al (2017) that pregnant women with PROM occurred in primigravida as many as 113 people (45.6%) and multigravida as many as 135 people (54.4%). This could be due to trauma in a previous pregnancy and cause cervical insufficiency (Emechebe.,et al 2015). Cervical insufficiency is the term for the inability of the cervix to sustain the fetus without uterine contractions and dilatation.

This happens because of structural and functional damage (Wang et al., 2018). In addition, it is caused by damage to cervical tissue which allows the uterine floor muscles to stretch. As a result of this stretching can activate prostaglandin E2 and interleukin-8, that it can disrupt the balance of synthesis and degradation of the extracellular matrix, causing PROM (Merti, 2017).

These results are in accordance with the theory described by Prawirohardjo (2008)

pregnant women with PROM often occur in multigravida because in multigravida there is endometrial damage due to stretching, making it easier for infection to occur. This infection can originate from the vagina and cervix which will then occur in the biomechanical process of the amniotic membrane in the form of proteolytic and produce enzymes that can damage the enzyme itself so that damage to the extracellular matrix eventually occurs PROM (Cunningham, 2014).

Meanwhile, according to the theory of Nugroho (2012) explains that PROM is a rupture of the amniotic membrane which allows a direct relationship between the inside of the vagina and the external environment that facilitates infection. Whereas this amniotic membrane functions to limit and protect so that there is no direct contact with the outside environment so as to reduce infection. The longer the latent period, the higher the chance of infection in the uterus. The results of this study are in line with previous research by Widyana (2016) that pregnant women who experience PROM are mostly handled by SC around 58.8% and pregnant women with PROM are born normally around 41.2%.

Leucocytes are one of the components of blood cells that contain a nucleus and the number of leucocytes in the blood is around 5,000-9,000 cells/mm³ (Sutjahjo, 2016). Leukocytes have a function as the body's defense system that provides an immediate response when foreign objects enter the body (Cunningham, 2014). Leucocyte level is a value from laboratory examination to calculate the number of leucocytes in the blood with the aim of seeing whether infection and inflammation occur (Darmayani et al., 2018). If the leucocyte level is >10,000/mm³ in ul/blood, there is an increase in the leucocyte level (leucocytosis). Meanwhile, if the leucocyte level is <5,000/mm³ in ul/blood, there will be a decrease in the leucocyte level (leucopenia) (Pelni Hospital Referral Value).

Based on research data, it is known that pregnant women who experience PROM have more elevated levels of leucocytes. The results of this study are in accordance with the theory of Cunningham (2014) which states that an increase in leucocyte levels in PROM is caused by an infection. In pregnant women, there are physical and chemical changes in urine that encourage urinary tract infections (UTIs). If a UTI occurs in pregnant women, there is an increase in the incidence of PROM due to pathogenic bacteria that affect the amniotic membrane (Cunningham, 2014).

However, due to mechanical, hormonal and physiological changes during pregnancy, E. coli bacteria can ascend from the urinary tract and secrete phospholipase A2 and C that it can increase the concentration of arachidonic acid and can release PGE2 which functions to increase uterine myometrial contractions, interfere with the synthesis and degradation of the amniotic membrane and eventually PROM occurs (Cunningham, 2014). This study is in line with research conducted by Kurniawan (2020) which shows that the majority of pregnant women who experience PROM have an increase in leucocyte levels by 69.4% and a small proportion of pregnant women who experience PROM have no increase in leukocyte levels by 30.6%.

Based on the results of bivariate analysis, it is known that there is a significant relationship between PROM and an increase in leukocyte levels (p value = 0.036). This research is in line with the research that has been conducted by Widyana (2016), pregnant women who experience PROM have an increase in leucocyte levels. The results of this study are in accordance with research in China in 2016, that pregnant women who experience PROM have higher leukocyte levels (Wang et al., 2016). This occurs because the increase in leucocyte levels in pregnant women with PROM is

caused by an infection where these bacteria can spread to the uterus and amniotic fluid which then secretes enzymes that can degrade the extracellular matrix and significantly reduce the tensile strength and elasticity of the amniotic membrane (Negara et al, 2017).

Bacteria that spread to the body will activate the monocyte macrophage system which triggers an inflammatory reaction. Furthermore, it will increase arachidonic acid so that the leucocytes that normally live in the lymph nodes will circulate into the blood as a form of body defense from germs so that the number of leucocytes in the blood will be more than usual, resulting in an increase in leucocyte levels (Sherwood, 2016). In the era of the covid pandemic, the health of pregnant women needs to be considered, namely in the context of the potential impact of COVID-19 on pregnancy because inflammatory mediators related to COVID-19 have been associated with poor perinatal outcomes (Liu et al., 2020).

Based on the results of research conducted by the Spanish Obstetric Emergency Group, it was found that pregnant women who were exposed to COVID-19 had a higher risk of PROM at term and preterm. Therefore, the possibility can be used as a reason why in the era of the covid 19 pandemic, pregnant women who experienced PROM were very many, namely at the Pelni Hospital in 2020, there were more than 3000 patients experiencing PROM.

CONCLUSION

It was found that from 97 medical record data of pregnant women with PROM at Pelni Pertamburan Hospital, West Jakarta, 74 people (76.3%) occurred at gestational age > 37 weeks and 78 people (80.4%) of pregnant women with PROM experienced an increase in leucocyte levels. The relationship between PROM and the increasing of leucocyte levels to pregnant women at Pelni Hospital during COVID-19 pandemic in 2020 caused by the presence of infections from ascending microorganisms that spreads into the uterus and amniotic fluid as well as due to the inflammatory process. This causes arachidonic acid metabolism to be active so that the level of leukocytes in the blood being increases.

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Original Research

Comparison of Nutritional Status Between Exsclusive Breastfeeding And Formula Milkfed In Infants 0-6 Month

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ABSTRACT

Background: Malnutrion is compounded by the proliferation of processed foods like infant formula. This causes an increase in poor diets, obesity and a marked reduction in the number of mothers breastfeeding their babies. Results of a preliminary study at the Sungai Kakap Health Center on 20 Infants shows that malnutrition is higher in infants who are given formula milk than in infants who are exclusively breastfed were 4 vs 1.Aim of this study is to compare nutritional status between exclusive breastfeeding and formula milkfed.

Methods: This study used a comparative analytic design. This study's population was 39 Infants who get formula milk as a subject group at the Sungai Kakap Health Center. Sampel consist of 36 Infants exclusively breastfed (control) and 36 Infants formula milk as a subject choose by random sampling technic. The instrument used was a observational sheet and categorial sheet. The bivariate analysis used Mann Whitney

Results: The test results showed a comparasion nutritional status between exclusively breastfed and formula milk (p=0,016) on Infants 0-6 month and the average ranking of the group of Infants with exclusively breastfed is higher (41.50) than the group of Infants with formula milk (31.50), but malnutrion suffered at male baby than female

Conclusion: Used of varied and interesting tools about exclusive breastfeeding and counseling about best nutrition for Infants needs to be increased.

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INTRODUCTION

Every infant and child has the right to good nutrition under the Convention on the Rights of the Child, in many countries less than a fourth of infants have access to the required dietary diversity and feeding frequency. Inappropriate feeding practices contribute up to a third of all cases of child malnutrition. Undernutrition also is associated with 45% of child deaths (World Health Organization, n.d.). Prevalence of

malnutrition at infants in Indonesia, West Borneo and Kubu Raya Regency were 3.90%, 5.20% and 4.20% (Kes et al., 2019).

Malnutrition in infants causes fatique, weak, tired, lethargic, brain development disorders occur, the level of intelligence decreases. Long term causes low IQ, decreased mental development, weak physical condition, susceptible to various diseases such as ARI, diarrhea, tuberculosis, hepatitis, and so on. More nutrition causes delays in the development of gross and fine motor movements. Over nutrition at an early age can increase the risk of health problems such as type 2 diabetes, glucose metabolism disorders, heart disease, blood vessel blockage, and so on in adulthood (Kartini et al., 2014).

Proper infant nutrition is fundamental to a child's continued health, from birth through adulthood. Correct feeding in the first three years of life is particularly important due to its role in lowering morbidity and mortality, reducing the risk of chronic disease throughout their life span, and promoting regular mental and physical development. Malnutrion is compounded by the proliferation of processed foods like infant formula and products rich in salt, free sugars and trans fats. This causes an increase in poor diets, obesity and a marked reduction in the number of mothers breastfeeding their babies (World Health Organization, n.d.).

Breastfeeding is one of the most effective ways to ensure child health and survival. If breastfeeding were scaled up to near universal levels, about 820 000 child lives would be saved every year. Globally, only 40% of infants under six months of age are exclusively breastfed (Victora et al., 2016). Its happened too in Indonesia and Kubu Raya Regency coverage of infants who are exclusively breastfed at the age of 6 months only 65.16 % and 62.82% its lower than the national target of 80% (Kes et al., 2019).

The problem of infant nutrition in Indonesia is overcome by improving the granting of exclusive breast feeding (EBF). Extensive evidence has shown that breast milk (ASI) is the best source of nutrition for nearly all infants, contains complete nutrients such as carbohydrates, protein, fat, vitamins, minerals to support normal infant growth, digestive enzymes and hormones is very easily absorbed. In addition to these nutrients, it is rich in immune cells, including macrophages, stem cells, numerous as a immune system and as well as in brain development (Martin et al., 2016). Breastfeeding has been shown to be of critical importance to a child's development, including increased IQ, school performance and higher income in adult life (World Health Organization, n.d.).

Infant formulas are unique because they are the only source of nutrition for many infants during the first 4 to 6 months of life. They are critical to infant health because they must safely support growth and development (Deckelbaum et al., 2004). Infant formulas could be considered as more than just food caused intended as an effective substitute for infant feeding comes from cow's milk or soy milk which is formulated so that the composition is close to breast milk although it will not be exactly the same (Fikawati, 2015). Although similar to breast milk, several studies have reported that growth disorders such as malnutrition are more common in formula-fed infants.

Therefore, exclusive breastfeeding is the right choice and is highly recommended (Agria, 2012). Breastfed infants have different growth characteristics compared with formula-fed infants. They grow at slightly different rates and have a different body composition and may have a lower risk for later obesity (Deckelbaum et al., 2004). Mismatch of formula milk dosage can also lead to undernutrition or overnutrition.

The results of the study on 97 infants fed formula milk reported an average of 11.31 grams/serving, 12x/day, with good nutritional status (52.57%), over nutrition (37.11%), under nutrition (8.25%), poor nutrition (2.05%). There is a positive relationship between the discrepancy in the dose of formula milk and nutritional status. So the more inappropriate the dose of formula milk, the more abnormal the nutritional status. The mismatch of doses resulted in over nutrition by 69.70%, under nutrition by 24.24% and malnutrition by 6.06% (Kartini et al., 2014). In terms of disease transmission, the results of the study reported that infants who were not exclusively breastfed were more susceptible to infectious diseases, 100% diarrhea, 60% ear infections, 30% type 1 diabetes and 40% leukemia (Oktova, 2017).

The results of the study reported that infants who consumed formula milk before the age of 6 months had a 6.19 times greater risk of becoming obese because of the high protein content such as branched-chain amino acids (BCAAs) or amino acids that were given early so that it had an impact on increasing insulin secretion and modulating concentration Insulin-like Growth Factor-1(IGF-1) and IGF-1 hormones which have an impact on increasing preadipocyte differentiation and increasing the number of adipocytes in the child's body. Toddlers who consume formula milk >100 g/day are 7 times more likely to be obese compared to toddlers who consume <100 g/day (Utami & Wijayanti, 2016).

The results of a preliminary study by researchers at Sungai Kakap Health Center revealed that the coverage of exclusive breastfeeding in 2018 was 1,241 (56.64%) to 1,311 (58.26%). The description of nutritional status in exclusively breastfed infants was still found to be undernutrition in 2018 as many as 5 (0.40%), poor nutrition 1 (0.16%), over nutrition 1 (0.16%) and for malnutrition in 2019 as many as 4 (0.30%), malnutrition 1 (0.07%), and over nutrition 2 (0.15%). The results of observations and interviews with 20 infant divided by 13 male infant and 7 female infant in 2020 that shown 11 formula Milk-fed infant and 9 exclusively breastfed infant. Nutritional status found 4 infants who were given formula milk with poor nutrition.

This shows that malnutrition is higher in infants who are given formula milk than in infants who are exclusively breastfed. The aim of this study was to determine the difference in nutritional status between exclusive breastfeeding and formula milk for infants aged 0-6 months at Sungai Kakap Community Health Center in 2020.

MATERIALS AND METHOD

This study used a comparative analytic design. This study's population was 72 infants whose at the Sungai Kakap Health Center. Sampel consist of 36 Infants exclusively breastfed (control) and 36 infants formula milkfed as a subject choose by random sampling technic. The bivariate analysis used Mann Whitney. The research conducted in Sungai Kakap Healthcare, as for a reason for choosing the location, namely because was still found to be undernourished and malnutrition between infants who were given formula milk than exclusively breastfed after do preeliminary study of 20 infants. And This research conducted in February until Juni 2020.

The instrument used was a observational sheet for check type of milk as a infants nutrition with interview mom of infants and writed a result of weight and height after measured and categorial sheet Z-Score about nutritional status for diagnosed. Data collection was carried out by researcher filling out observation list to determine the type of milk which baby get. Researcher also write value of weight and height infants after measured at the Sungai Kakap Health Center in 2020. Data were analyzed computerized

with 3 univariate steps to determine the frequency and percentage of each variable studied. Bivariate analysis to see the comparison between the independent variable and the dependent variable used the Mann Whitney test with a p value of 0.05.

RESULTS

This analysis is aims to describe variable independent namely knowing nutrition status from 36 Infants get with formula milk and 36 infants Exsclusive Breastfed

Table 1. Distribution Frequency of Nutritional Status of Infants Between Formula Milk and Exclusive Breast Feeding at Sungai Kakap Health Care

Nutritional Status	Exclusive Breastfed		Formula Milk	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Abnormal	9	25%	17	47%
Normal	27	75%	19	53%
Total	36	100%	36	100%

Table 1 above showns prevalence of abnormal nutritional status at Infants formula milk (47%) higher than exclusively breastfed were 47 % vs 25%. Prevalence of normal nutritional of exclusively breastfed higher than formula milk were (75%) vs (53%).

Table 2. Distribution Frequency Malnutrition Status infants whose get Formula Milk and Exclusive Breast Feeding indiced by Sex

Nutritional Status	Exclusive Breastfed		Formula Milk	
	Male (n)	Female (n)	Male (n)	Female (n)
Malnutrion	2	4	4	1
Under nutrition	0	0	5	3
Over nutrition	3	0	2	2
Total	5	4	11	6

Table 2 above showns the prevalence of malnutrition and under nutrition was higher for males than females 16 vs 11 infants. Prevalence over nutritiont at male infants whose exclusive breastfed higher than male infants whose get formula milk fed 3 vs 2. But prevalence of Under nutrition of male infants whose get formula milk fed was higher than infants whose get exclusively breastfed 5 versus 0.

Table 3. The Average Rating Nutritional Status of Infants Between Formula Milk and Exclusive Breast Feeding at Sungai Kakap Health Care

Group	Mean Rank	Sum of Rank
Exsclusive Breast Fed	41.50	1494.00
Formula Milk	31.50	1134.00

In The Table 3 above shows mean rank of the group of infants exclusively breastfed is higher than formula milk fed were 41.50 vs 31.50.

Table 4. Differences in Nutritional Status of Infants Between Formula Milk and Exclusive Breast Feeding at Sungai Kakap Health Care

Variable	Man-Whitney U	Wilcoxon W	Z	Asymp.Sig. (2-tailed)
Nutritional Status	468.000	1134	-2.401	0.016

Table 4 above shown there was difference nutritional status at infants aged 0-6 months for exclusively breastfed and formula milkfed (P: 0.016) (P < 0.05) was calcucated by Man-Whitney test.

DISCUSSION

The study showed that the good nutrition at exclusive breastfeeding infants was higher than formula milk feeding infants were 75 % vs 53 %, but prevalence poor nutrition and overnutrition at EBF higher than and formula milk feeding were 17 % vs 0 % and 11 % vs 8 %. We also found prevalence malnutrition and poor nutrition at male infants was higher than female were 11 % vs 3% and 14 % vs 8 % and but overnutrition at male infants higher than female were 8% vs 0%. The explanation is male need more energy as well as any other nutrients for sufficient growth compared to girls (Karuniawati, M.Shoim Dasuki, 2016).

The study showed that the results support extensive evidence has shown that breast milk (ASI) is the best source of nutrition for nearly all infants, contains complete nutrients such as carbohydrates, protein, fat, vitamins, minerals to support normal infant growth, digestive enzymes and hormones is very easily absorbed. In addition to these nutrients, it is rich in immune cells, including macrophages, stem cells, numerous as a immune system and as well as in brain development (Martin et al., 2016). Based on this sudy shown the higher prevelance of good nutrion at infants because human breast milk is a complex matrix with a general composition of 87% water, 3.8% fat, 1.0% protein, and 7% lactose. The fat and lactose, respectively, provide 50% and 40% of the total energy of the milkon.

However, the composition of human breast milk is dynamic and changes over time, adapting itself to the changing needs of the growing child. For instance, during each nursing session, the milk that is expressed first (foremilk) is thinner with a higher content of lactose, which satisfies a baby's thirst, and following the foremilk, hindmilk, is creamier with a much higher content of fat for the baby's needs. Its can meet the nutrient infants need on quantity and quality (Martin et al., 2016). The nutritional status of infants is also influenced by the complete nutritional content contained in breast milk.

During early lactation, the protein content in human milk ranges from 1.4–1.6 g/100 mL, to 0.8–1.0 g/100 mL after three to four months of lactation, to 0.7–0.8 g/100 mL after six months. Moreover, milk fat is a carrier of taste and aroma. In general, human breast milk fat content ranges from 3.5% to 4.5% during lactation. Human breast milk also contains two essential fatty acids, linoleic acid (C18:2w6) at 15% and alpha-linolenic acid (C18:3w3) at 0.35%. These two essential fatty acids are, respectively, converted to arachidonic acid (AA, C20:4w6) and eicosapentaenoic acid (EPA, C20:5w3), the latter of which is further converted to docosahexaenoic acid (DHA, 22:6w3). AA, EPA and DHA are important for regulating growth, inflammatory responses, immune function, vision, cognitive development and motor systems in newborns.

Breastfeeding has been shown to be of critical importance to a child's development, including increased IQ, school performance and higher income in adult

life (World Health Organization, n.d.). The other hand study in Bangladesh shown 55 % of infants were exclusively breastfed during the first 6 months. If EBF was terminated during 0–2 months, 2–4 months the odds of becoming underweight were 2.16 and 2.01 times higher, respectively, than babies for whom EBF was not terminated. Lack of EBF up to 6 months of birth has adverse consequences on the health and nutritional status of children. A substantial proportion infectious disease and undernutrition could be prevented if EBF was ensured up to 6 months after birth. Our findings were consistent to the WHO (Khan & Islam, 2017).

The results of this study are in accordance with other study in Indonesia by Ramadhana report the good nutritional status of infants who are exclusively breastfed is 58.6% greater than the good nutrition of 41.4% of formula milkfed infants (Ramadhana et al., 2019). Other study in Semarang also found 6 Infants (8.3%) did not get exclusive breastfeeding and 66 Infants (91.7%) got exclusive breastfeeding. The results of statistical tests were carried out using the Fisher Excat Test and obtained a p value of 0.000 at a significance level of 5%. So it was concluded that there was a relationship between exclusive breastfeeding and the nutritional status of infants aged 6-12 months (Kartini et al., 2014).

Apart from being nutritious, breast milk also has a multiple protective effect on infectious diseases. First, breast milk has specific immunological properties that protect the baby from infection. Second, the antimicrobial composition, anti-inflammatory, immunomodulatory protection, and bioactive molecules and compounds of breast milk creates protection against infection. Third, breast milk promotes mucosal maturation, stimulates neonatal immune system; limiting exposure to foreign germs food antigens. Its extend by study in Bangladesh Lack of EBF increased the odds of diarrhea, fever and ARI. Among the babies aged 6 months or less 27.37% of diarrhea, 13.24% of fever and 8.94% of ARI could have been prevented if EBF was not discontinued (Khan & Islam, 2017).

The study showed that the malnutrition, poor nutrition, normal and overnutrition at Infants whose get formula milkfed at the Sungai Kakap Health Center in 2020 were 14 %, 22, % 53 % and 11 %. This result is according by article review statement cow's milk is the basis for most infant formula. However, cow's milk contains higher levels fat, minerals and protein compared to breast milk. Therefore, cow's milk must be filtered and diluted to more closely resemble the composition of human breast milk. Baby made from cow's milk the formula contains additional vegetable oils, vitamins, minerals and iron for consumption by most healthy people full term baby (Martin et al., 2016).

Based on study shown infants who get formula milk fed will have a kind of abnormal nutrition from malnutrion, poor nutrion until over nutrion. Its affect by many factor like missmatch dosage of formula and formula milk consumption time. Its proved by study in mexico report Exclusive breastfeeding of less than three months is associated with almost 4 more times in obese children. There was a difference in age of complementary feeding, duration of breast feeding, and formula milk consumption time for obese and non-obese children (Sandoval et al., 2016). On the other hand study in results obtained by the growth of infants who are exclusively breastfed are better enforced 18 (85.7 %) infant formula and enforced a total of 11 (52.4 %) baby, whereas growth babies who are not breastfed exclusively both enforced by 3 (14.3 %) formula and enforced by 10 (47.6 %) infants (Locitasari, 2014).

Its accordance with the theory of which states that the energy content in 100 ml of formula milk reaches 77.6 kcal/100 ml, higher than breast milk which is only 63.9 kcal/100 ml which has an impact on energy intake which is much greater than that of breast milk. Needs and causes obesity through the accumulation of adipose tissue. The results of the Mann Whitney U statistical test obtained significant results (p) 0.016 or probability below 0.05 (0.016 < 0.05) so that (Ha) was accepted, namely there was a difference in nutritional status between infants whose exclusively breastfed and formula milk fed for infants 0-6 months. Besides the higher prevalence of good nutrition of infants exclusively breastfed 0-6 month aged (75%).

Previous author's research in Kampung Dalam Health Center also found the difference in nutritional status between infants whose exclusively breastfed and formula milk fed for infants ≥ 6 months by z value of -3.894 with a significant (p) 0.000, but none of the infants had more over nutrition (Yuliana & Melyani, 2020). On the other hand study in Semarang report good nutrion on infants exclusively breastfed were (88,2%). Mann Withney test results get a z value of -2.694 with a significant (p) 0.020. So it shown there are differences in the nutritional status of infants aged 7 - 12 months who are exclusively and not exclusively breastfed (Atika et al., 2014).

Although efforts have been made to make nutrition-related outcomes of formula-fed infants more similar to those of breastfed infants, there has been limited progress with regard to bioactive components that can affect short- and long-term outcomes. Several bovine-milk proteins are similar to their human milk counterparts but may be present in lower concentrations. Enriched bioactive milk proteins need to be evaluated for their ability to exert functions in the formula-fed infant, and whether these functions will have long-term benefits (Lönnerdal, 2014).

Giving formula milk at the age of infants under 6 months will have an impact on the nutritional status of infants. If formula milk is too dilute it will result in less nutritional intake for the baby's body, and have an impact on weight gain so that the baby is classified as malnourished (Kartini et al., 2014). Infant formula milk is intended as an effective substitute for infant feeding comes from cow's milk or soy milk which is formulated so that the composition is close to breast milk although it will not be exactly the same. Formula milk is a liquid or powder with a certain formula, given to infants and children that functions as a substitute for breast milk. Formula milk has a very important role in infant food because it often acts as the only source of nutrition for Infants (Fikawati Sandra, 2015).

The other study proved the same result is nutritional status of infants with formula milkfed is higher than exclusively breastfed were 75.9% vs 24.1%. Prevalence malnutrion and poor nutrition of infants not exclusively breastfed were 9% vs 1.3% (Arifah et al., 2013). Exclusive breastfeeding is the main choice for infant nutrition because the composition of lactose, GI and calories are suitable for Infant's needs during the 6 month period, which is most appropriate for Infants because of its miraculous composition and can protect Infants from various infectious diseases so that Infants don't get sick easily and automatically the infants's nutritional status will remain stable. Formula milk is nutrition for Infants who do not get breast milk from the mother, it requires special skills from the mother or the person who takes care of the baby in the presentation and frequency of giving it so that it can become proper nutrition for Infants.

On this basis, we recomend midwife to improvement breastfeeding education to mothers and family. Guiding from midwives for mothers who fail to give breast milk.

Provide training to mothers on how to serve formula milk at the right dose for reduce the potential for malnutrition or overnutrition in infants. Because mismatch of formula milk dosage can also lead to poor nutrition or overnutrition.

CONCLUSION

Exclusively breastfed Infants have good nutrition than formula milf fed were 75 % vs 53 %. Statistical tests shown there was a difference between exclusive breastfed and formula milkfed on the nutritional status of infants aged 0-6 months p value 0.016. Prevalence malnutrition and poor nutrition at male infants was higher than female were 11 % vs 3% and 14 % vs 8 % and but overnutrition at male infants higher than female were 8% vs 0%. We recomend midwife to improvement breastfeeding education to mothers and family.

Guiding from midwives for mothers who fail to give breast milk. Provide training to mothers on how to serve formula milk at the right dose for reduce the potential for malnutrition or overnutrition in infants. Because mismatch of formula milk dosage can also lead to poor nutrition or overnutrition

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Original Research

The Role Of Midwives And Participation Of Postpartum Mothers In Postpartum Family Planning

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ABSTRACT

Background: *Postpartum birth control is one of the family planning programs that still have low coverage. Midwives have a big role in increasing postpartum family planning coverage. Postpartum mothers will often contact the midwife so that the midwife can advise the postpartum mother to use postpartum birth control. The aim of this study is to evaluate the role of midwives and postpartum mothers in the use of postpartum family planning in the Asahan regency*

Methods: *This study used a cross-sectional design, the location study was Asahan regency, and the population was 81 postpartum mothers in Asahan Regency. The researcher used purposive sampling with the criteria of giving birth in the last one month and having more than two children. The instrument used was a questionnaire. This research will conduct cross-tabulation distribution.*

Results: *The results of the cross-tabulation showed that 24 birth control users at the midwife's clinic gave birth at a midwife clinic, 18 people gave birth at a midwife clinic (22.2%), and 21 people had postnatal health checks (25, 9%), received advice on using postpartum family planning as many as 15 people (18.5%) and received family planning counselling after delivery as many as 14 people (17.3%). This study indicated that postpartum family planning was carried out in the midwife clinic as many as 18 people (22.2%) and in the hospital or public health centres as many as nine people (11.1%).*

Conclusion: *Postpartum mothers who do postpartum health checks to midwives are more likely to use postpartum family planning than postpartum mothers who do not undergo postpartum health checks. Postpartum mothers who advised to use postpartum family planning from a midwife will have a greater risk of using postpartum FP than postpartum mothers who do not receive postpartum FP.*

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INTRODUCTION

The population explosion phenomenon is a social phenomenon that has attracted a lot of world attention from year to year. This is marked by a drastic increase in the world's population. In the early 19th century, the world's total population crossed the 1 billion people threshold for the first time in history. Since then, the growth rate has been increasing steadily, reaching very high peaks in the 20th century and slowing slightly after that. The total world population reached 7 billion after 2010 until now, and it is estimated that this figure will continue to grow to reach 9 billion by 2045 (Van Bavel, 2019).

Based on data from the Population Reference Bureau (PRB), Indonesia has a major influence on the high world population. Indonesia is in the fourth rank as a country that contributes to a fairly large population of 268.4 million after China (1,398.0 million), India (1,391.9 million) and the United States (329.2 million) (Population Reference Bureau, 2019). The total population of Indonesia based on BPS data in 2018 was 265.0 million people with a population growth rate of 1.33 per year (Badan Pusat Statistik, 2019). Indonesian population experts estimate that the population will continue to increase between 293-384 million people in 2050.

With an uncontrolled growth rate and an unbalanced population distribution according to the carrying capacity of nature and the carrying capacity of the environment, a large population will become a problem and a burden for the people and state of Indonesia (Tjaja, 2020). In terms of quantity, the large population means that there will be problems in providing clothing, food and shelter. Meanwhile, in terms of quality, it can be seen from Indonesia's competitiveness with other nations in the world. It will impact the social, economic, political and state defence and security sectors (Dirjen Kemenkeu RI, 2015).

Postpartum family planning services are part of the postpartum service using contraceptives by mothers or husbands immediately after birth until 42 days after that. Previously during pregnancy, mothers should also receive counselling and counselling about postpartum family planning. According to Noriani (2017), postpartum mothers are motivated to use postpartum family planning, especially for homemakers and higher education.

Agustina (2017) said that mothers and their husbands get advice about when the fertile period will return in postpartum family planning services, the right time to start sexual activity, and the right contraception during the lactation period. Postpartum contraception aims to reduce unmet need, a group of women who need but not fulfilled. Kusumaningrum (2017) said that there are so many postpartum mothers who are resistant to postpartum family planning. This is attributed to postpartum mothers' lack of understanding about postpartum family planning or their use of postpartum family planning outside of the recommended three months postpartum period.

North Sumatra Province is one of the provinces that has experienced a decline in the number of family planning users in Indonesia. In 2014 the number of family planning users in North Sumatra Province was 51.87%, then decreased to 49.06% in 2015, then decreased again in 2016 to 48.65% than in 2017 to 47.61%, and in 2018 it again experienced a decline to 47.84% (BPS RI, 2019). The decrease in the number of family planning users in North Sumatra Province followed by an increase in the population growth rate in North Sumatra Province in 2000-2010 from 1.1 to 1.27 in 2010-2018% (BPS RI, 2019).

The low postpartum family planning in the Province of North Sumatra has made the BKKBN of North Sumatra Province make a breakthrough by training on postpartum family planning for districts or cities in North Sumatra Province. Asahan District was one of the first three districts to receive postpartum family planning training in 2016 together with Medan City and Deliserdang Regency. It hoped that postpartum family planning training could improve the skills of family planning field officers to provide family planning counselling to pregnant women so that pregnant women are willing to plan a family planning program during childbirth.

Agustina (2017) said one of the health services provided during the postpartum period is postpartum visits conducted by midwives by providing counselling and counselling to mothers and families regarding postpartum family planning. Midwives advice regarding birth spacing or termination of subsequent fertility will strengthen their wishes about postpartum family planning adaptation. Midwives are the personnel who provide services to postpartum mothers; the role of midwives will significantly impact the decision of postpartum mothers in using postpartum birth control dua (Juliaan, 2015).

Midwives should be more intense in disseminating the use of post-birth and post-miscarriage contraceptives through advocacy for information, education and communication, especially MKJP instruments (MOP, MOW and IUD). According Stephen (2017) said postpartum mothers who have good attitudes and knowledge will have a high tendency to use postpartum family planning. Midwives have a big role in increasing the knowledge and attitudes of postpartum mothers in using postpartum family planning so that postpartum mothers will tend to use postpartum family planning.

The results of the Wahyuni (2019) research found that poor postpartum family planning achievement was attributed to postpartum mothers' lack of awareness about postpartum family planning. Midwives who do not have postpartum care contribute to the poor rate of postpartum family planning. The results of the Sari (2017) study show that there are still many midwives who have not carried out their duties in counselling mothers who are prospective family planning acceptors, so that the public's knowledge about postpartum family planning is still lacking. The aim of this study is to evaluate the role of midwives and postpartum mothers in the use of postpartum family planning in the Asahan regency.

MATERIAL AND METHOD

This research conducted using a cross-sectional study design because this research was conducted simultaneously for the dependent and independent variables. This study used a quantitative research approach in Asahan Regency, especially West Kisaran and Rawang Panca Arga districts, North Sumatra Province. This research conducted in the District of West Kisaran and Panca Arga Rawang District of Asahan Regency for the District of West Kisaran is one district that has field officers who never received training in FP postpartum. Panca Arga Rawang District, where midwives have not received training but located close to West Kisaran District. Asahan Regency also has a fairly high population rate compared to other districts in North Sumatra Province. This research conducted from September 2020 to November 2020.

This study population were all postpartum mothers who had just given birth in Asahan Regency during the last three months. Based on data from the Health Profiles of North Sumatra Province in 2020, the number of deliveries from August to October 2020

in Asahan District was 416 postpartum mothers, then postpartum data in West Kisaran and Panca Arga districts were 81 postpartum mothers. Researchers took samples in this study as many as 81 postpartum mothers. The researcher used purposive sampling with the following criteria: postpartum mothers were in the study area for the last six months, gave birth in the last one month and gave birth to more than two children.

This study used primary data, which contains a questionnaire about the role of midwives in postpartum maternal participation in postpartum family planning, characteristic postpartum mothers and the participation of postpartum mothers in following postpartum family planning. Secondary data in this study used data from the Family Planning Office of Asahan Regency, data from West Kisaran and Panca Arga Districts. This study used a standard questionnaire instrument, namely the Program Performance and Accountability Survey (SKAP) questionnaire from the National Population and Family Planning Board. Researchers did not test the validity and reliability of the research instrument because they had used a standard questionnaire.

In this study, the univariate analysis used to see the role of midwives for postpartum family planning programs and the participation of postpartum mothers in postpartum family planning programs. This analysis conducted to provide a descriptive description or describe the characteristics of each of the variables studied. The description of these characteristics depends on the type of data categorical. In this study, the data to be analyzed are categorical data types so that the description of this data uses a frequency distribution with a percentage or proportion. The data analysis that will use in this research with cross tabulation.

RESULTS

This analysis aims to describe each variable's characteristics, namely knowing the age, education, knowledge, attitudes, training and performance of midwives in providing antenatal care services as many as 81 postpartum mother (Table 1).

Table 1. Distribution Age, Education, Health Insurance Owenership, Distance Home to Midwife Clinic, Had Use Contraception, Use Postpartum Contraception

Characteristics	Frequency	Percentage (%)
Age		
>35 Years	25	30,9
19-34 Years	56	69,1
Education		
High	48	59,3
Low	33	40,7
Work		
Yes	11	13,6
No	70	86,4
Health Insurance Ownership		
Yes	41	50,6
No	40	49,4
Had Use Contraception		
Yes	57	70,4
No	24	29,6
Use Postpartum Contraception		
Yes	27	33,3

Characteristics	Frequency	Percentage (%)
No	54	66,7

In the table 1, most respondents were 19-34 years old, as many as 56 people (69,1%), and those over 35 years old were 25 people (30,9%). Most education in this study was in higher education as many as 48 people (59.3%) and low education as many as 33 people (40.7%). Health insurance ownership found to have health insurance for 41 people (50.6%), and 40 people (49.4%) did not have health insurance. The results of this study indicate that respondents who work as many as 11 people (13.6%) and respondents who do not work as many as 70 people (86.4%).

Respondents who had previously used contraception were 57 people (70.4%), and respondents who had never used contraception before giving birth were 24 people (29.6%). Respondents who used postpartum family planning were 27 people (33.3%), and respondents who did not use postpartum family planning were 54 people (66.7%).

Table 2. Distribution Place of Antenatal Care, Place of Maternity, Control of Child Birth, Get Advice on Using Postpartum Family Planning, Midwives Provide Postpartum Family Planning Counseling, The Place to Get Postpartum Family Planning

Characteristics	Frequency	Percentage (%)
Place of Antenatal Care		
Midwife Clinic	73	90,1
Hospital or Public Health Center	8	89,9
Place of Maternity		
Midwife Clinic	57	70,4
Hospital or Public Health Center	24	29,6
Control of Child Birth		
Yes	62	76,5
No	19	23,5
Get Advice on Using Postpartum Family Planning		
Yes	49	60,5
No	32	39,5
Midwives Provide Postpartum Family Planning Counseling		
Yes	46	56,8
No	35	43,2
The Place To Get Postpartum Family Planning		
Midwife Clinics	18	22,2
Hospital or Public Health Center	9	11,1
Not use Postpartum Contraception	54	66,7

The results of this study indicate that the last pregnancy check was carried out by respondents at the midwife's clinic as many as 73 people (90.1%), and the last pregnancy examination was carried out at the hospital or Puskesmas as many as eight people (89.9%). This study indicates that the most respondent places for delivery are in the midwife clinic as many as 57 people (70.4%), and the place for delivery in the hospital or public health centre is 24 people (29.6%). The results of this study indicate that 62

postpartum mothers did postpartum health checks (76.5%) and postpartum mothers who did not undergo postpartum health checks were 19 people (23.5%). The results of this study showed that 49 midwives advised on the use of postpartum family planning (60.5%) and 32 midwives who did not provide advice on the use of postpartum family planning (39.5%).

This study showed that the midwives explained the use of postpartum family planning to as many as 46 people (56.8%), and the midwives did not explain the use of postpartum family planning as many as 35 people (43.2%). The results of this study indicate that the place of mothers who get postpartum family planning at the midwife clinic is 18 people (22.2%) and nine people get postpartum FP at the hospital or public health centre (11.1%) and postpartum mothers who do not use family planning postpartum as many as 54 people (66.7%).

Table 3. Distribution Cross Tabulation between Place of Antenatal Care, Place of Maternity, Control of Child Birth, Get Advice on Using Postpartum Family Planning, Midwives Provide Postpartum Family Planning Counseling with Use Postpartum Contraception

| Variable Midwife | Use Postpartum Contraception | | | | | |
| | Yes | | No | | Total | |
	f	(%)	f	(%)	N	(%)
Place of Antenatal Care						
Midwife Clinic	24	29,6	49	60,5	73	90,1
Hospital or Public Health Center	3	3,7	5	6,2	8	9,9
Place of Maternity						
Midwife Clinic	18	22,2	39	48,1	57	70,4
Hospital or Public Health Center	9	11,1	15	18,5	24	29,6
Control of Child Birth						
Yes	21	25,9	41	50,6	62	76,5
No	6	7,4	13	16	19	23,5
Get Advice on Using Postpartum Family Planning						
Yes	15	18,5	34	42	49	60,5
No	12	14,8	20	24,7	32	39,5
Midwives Provide Postpartum Family Planning Counseling						
Yes	14	17,3	32	39,5	46	56,8
No	13	16	22	27,2	35	43,2

This study shows that there were 73 respondents (90.1%) who conducted examinations at the midwife's clinic and 24 respondents who used postpartum family planning (29.6%), and those who did not use postpartum family planning were 49 respondents (60.5%). There were eight respondents (9.9%) who performed antenatal care at the hospital or public health centre, three respondents (3.7%) who used postpartum family planning and five respondents who did not use postpartum family planning (6.2 %). This study shows that there are 57 respondents (70.4%) who gave birth at a midwife clinic and 18 respondents who used postpartum birth control (22.2%), and 39 respondents who did not use postpartum family planning (48.1%). 24 respondents gave birth at the hospital or public health centre (29.6%), nine respondents

used postpartum family planning (11.1%) and 15 respondents did not use postpartum family planning (18.5%).).

This study shows that there are 62 respondents (50.6%) who conducted postpartum health checks at the midwife's clinic and 21 respondents (25.9%) who used postpartum family planning, and those who did not use postpartum family planning were 41 respondents (50, 6%). There were 19 respondents (23.5%) who gave birth at the hospital or public health centre, six respondents (7.4%) who used post-delivery family planning and 13 respondents (16%) who did not use postpartum family planning. This study shows that there are 49 respondents (60.5%) who get suggestions for using postpartum family planning from midwives, and respondents who use postpartum family planning are 15 respondents (18.5%), and respondents who do not use postpartum FP are 34 respondents (42 %). There were 32 respondents (39.5%) who did not get advice on the use of postpartum family planning from midwives, 12 respondents who used postpartum family planning (14.8%) and 20 respondents who did not use postpartum family planning (24, 7%).

This study shows that there are 46 respondents (56.8%) who get explanations of postpartum family planning from midwives and 14 respondents who use postpartum family planning (17.3%), and 32 respondents who do not use postpartum family planning (39, 5%). Respondents who did not get an explanation of postpartum family planning from midwives were 35 respondents (43.2%), then respondents who used postpartum family planning were 13 respondents (16%), and respondents who did not use postpartum family planning were 22 respondents (27.2%).

DISCUSSION

Midwives play an important role in the implementation of postpartum family planning. Midwives are health care professionals who assist mothers during pregnancy and childbirth. When the midwife suggests a suggestion, it hoped that postpartum mothers could follow it, including postpartum family planning. According to Tawakal (2018), midwives play an important role in providing postpartum family planning, especially when midwives provide health services when the mother performs pregnancy and postpartum examinations. Through promotion and information, midwives can provide knowledge and support to postpartum mothers to change their behaviour and decide to use postpartum family planning.

According Abbas, (2017) said postpartum mothers do not immediately use contraception because they are still confused about which contraceptive method they will use, so it is necessary to provide information about the choice of contraceptive method or method at this time. This study shows that there are 49 respondents (60.5%) who get suggestions for using postpartum family planning from midwives, and respondents who use postpartum family planning are 15 respondents (18.5%), and respondents who do not use postpartum FP are 34 respondents (42 %). There were 32 respondents (39.5%) who did not get advice on the use of postpartum family planning from midwives, 12 respondents who used postpartum family planning (14.8%) and 20 respondents who did not use postpartum family planning (24, 7%).

The results of the Azizah (2018) study indicate that the information provided by midwives will have an impact on the use of postpartum contraception. The results of the Lestari (2018) study show that the intention to use family planning after delivery is very good; if the midwife provides good information, it will increase the use of postpartum birth control. Wahyuni (2019) research results showed that someone who received

family planning counselling would have a 1.544 risk of using postpartum family planning than postpartum mothers who did not receive family planning counselling.

The midwife did counselling at home, but the postpartum mother turned out to be giving birth services to the hospital. The midwife stated that she had visited the maternity house several times; however, the maternity mother stated that she had received delivery services from the hospital, so she did not receive delivery services from the midwife. Mingchilina (2017) revealed that the way midwives carry out activities in providing contraception is already good; it is just that sometimes officers are not consistent in providing services, so acceptors do not feel comfortable. Midwives who have received training in the latest contraceptive techniques (CTU) will greatly impact contraceptive services.

The results of the Sembiring (2020) study show that postpartum mothers who get information from good health workers will become postpartum family planning acceptors. The need for information and counselling about sexual life and contraception is one of the most frequently asked questions in postpartum. There is a high probability that most mothers avoid sexual intercourse during pregnancy and after delivery. Wulandari (2020) said health workers play an important role in providing information about postpartum family planning methods to family planning acceptors; this must be started from the beginning of the antenatal visit and continued until labour and postpartum . According to Manik, (2019), the counselling provided by the midwife will help clients choose a suitable family planning method and help them continue to use this method correctly.

According Sitorus (2018) said postpartum birth control is very important because the return of fertility to a mother after giving birth is unpredictable and can occur before the arrival of the menstrual cycle, even in breastfeeding women. The first ovulation in a non-breastfeeding woman occurs 34 days postpartum, even earlier. This causes during breastfeeding; women often experience unwanted pregnancies at intervals close to previous pregnancies. Contraception should be used before sexual activity begins; therefore, it is very strategic to start contraception as early as possible after delivery.

This study shows that there are 46 respondents (56.8%) who get explanations of postpartum family planning from midwives and 14 respondents who use postpartum family planning (17.3%), and 32 respondents who do not use postpartum family planning (39, 5%). Respondents who did not get an explanation of postpartum family planning from midwives were 35 respondents (43.2%), then respondents who used postpartum family planning were 13 respondents (16%), and respondents who did not use postpartum family planning were 22 respondents (27.2%). Midwives do not provide postnatal family planning counselling because many postpartum mothers provide postnatal services to hospitals so that midwives do not come to postpartum mothers' homes. When postpartum mothers provide postpartum services, it turns out that many postpartum mothers stated that they did not get an explanation about post-delivery family planning by health workers (doctors and midwives) at the hospital.

The results of the Wahyuningsih (2017) study showed that the low postpartum family planning coverage was due to postpartum mothers not getting enough information about postpartum family planning. Postpartum mothers are still afraid of foreign objects in the uterus, afraid that the IUD will come out by itself. The explanation of the midwife is an important part of increasing the knowledge of postpartum mothers about postpartum family planning. Rufaindah (2019) the study

showed that postpartum family planning counselling affects the use of postpartum contraception.

Providing family planning counselling and contraceptive methods during the perinatal period can increase maternal awareness to use contraception. Khotimah (2016) and Musmundiroh (2019) the study showed that postpartum family planing counselling will significantly impact the use of postpartum family planning; when given postpartum family planing counselling, it will increase the use of postpartum family planning. The results of the Kurnia (2015) study showed that an increase in the use of injectable contraceptives as the main choice in using postpartum family planning. Mothers consider injection contraceptives to be simpler and more comfortable, not complicated; mothers are afraid to use IUDs because there are stories in the community that fail to use IUDs, when menstruation is more blood and tends to be longer, can run around in the stomach, uncomfortable with intercourse and pain stomach. Midwives in providing postpartum family planning explanations have a very important role in providing comfort for mothers in determining and using postpartum family planning.

According Abbas, (2017) said counselling gives knowledge to mothers who do not know and reminds mothers who already understand about family planning. This new knowledge will be tried for mothers who know and understand about family planning, especially if they feel it will be useful or needed. Counselling using midwife by trained personnel when given during labour is certainly very effective in a mother's memory because shortly after counselling, she immediately experiences labour which most women consider as a painful experience. Counselling to midwives will provide the widest possible opportunity for mothers to choose and use the family planning method that best suits their needs (informed choice) and their medical conditions.

According Sulistyorini (2018) said postpartum mothers can increase their knowledge about postpartum contraception through various media and be more active in visiting midwives to get correct and accurate information about postpartum contraception. The high interest in postpartum contraception should be followed up immediately by following or being one of the acceptors for postpartum contraception to avoid risks due to unplanned pregnancy. Midwives have a very important role in providing services to the community, especially at the public health center. The role of these officers includes promotive, preventive, curative and rehabilitative efforts. The role of health workers for pregnancy and childbirth women is to increase knowledge, change behaviour, and increase compliance to improve the quality of life.

It hoped that the increasing frequency of ANC visits would increase exposure to family planning information. Three models of respondents' exposure to family planning information during MCH service visits, namely counselling for health workers, discussions with patients and exposure to information, education and communication. During pregnancy and baby health visits, nearly 80% of women reported seeing information, education and communication material. Efforts are needed to improve the quality of ANC services by providing information about family planning from health workers. It can be concluded that counselling during ANC visits is used as a strategy to introduce contraception to increase the use of post-partum contraception; this is also an effort to support labour planning programs and prevention of complications.

CONCLUSION

The majority of postpartum mothers receive postpartum family planning at midwife clinics (29,6%) and hospitals or health centres (3,7%), but many postpartum

mothers do not use postpartum family planning (66,7%). Postpartum mothers who do postpartum health checks to midwives are more likely to use postpartum family planning than postpartum mothers who do not undergo postpartum health checks. Postpartum mothers who advised to use postpartum family planning from a midwife will have a greater risk of using postpartum FP (60,5%) than postpartum mothers who do not receive postpartum FP (39.5%). Counselling given by midwives will make postpartum mothers use postpartum family planning (56,8%)compared to postpartum mothers who do not receive counselling from midwives (43,2%).

Midwives are expected to continue to provide services for postpartum visits to postpartum mothers and then provide postpartum family planning counselling to postpartum mothers to increase the use of postpartum family planning. Postpartum mothers should actively ask about the postpartum family planning program to increase the utilization of postpartum family planning.

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Original Research

Biscuit Based On Purple Sweet Potatoes As MP-ASI Processing Innovation

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ABSTRACT

Background: *Postpartum birth control is one of the family planning programs that still have low coverage. Midwives have a big role in increasing postpartum family planning coverage. Postpartum mothers will often contact the midwife so that the midwife can advise the postpartum mother to use postpartum birth control. The aim of this study is to evaluate the role of midwives and postpartum mothers in the use of postpartum family planning in the Asahan regency*

Methods: *This study used a cross-sectional design, the location study was Asahan regency, and the population was 81 postpartum mothers in Asahan Regency. The researcher used purposive sampling with the criteria of giving birth in the last one month and having more than two children. The instrument used was a questionnaire. This research will conduct cross-tabulation distribution.*

Results: *The results of the cross-tabulation showed that 24 birth control users at the midwife's clinic gave birth at a midwife clinic, 18 people gave birth at a midwife clinic (22.2%), and 21 people had postnatal health checks (25, 9%), received advice on using postpartum family planning as many as 15 people (18.5%) and received family planning counselling after delivery as many as 14 people (17.3%). This study indicated that postpartum family planning was carried out in the midwife clinic as many as 18 people (22.2%) and in the hospital or public health centres as many as nine people (11.1%).*

Conclusion: *Postpartum mothers who do postpartum health checks to midwives are more likely to use postpartum family planning than postpartum mothers who do not undergo postpartum health checks. Postpartum mothers who advised to use postpartum family planning from a midwife will have a greater risk of using postpartum FP than postpartum mothers who do not receive postpartum FP.*

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INTRODUCTION

Infancy and childhood is the most important period in human development, because infancy and childhood growth and development occurs which determines the

quality of human resources in the future. Lack of nutrients so that they are susceptible to disease (Rezki Ananda, 2018). UNICEF in The State of the World's Children 2019 on Children, Food and Nutrition reported that 49.9% of children aged 0–59 months who experienced poor growth were in South Asia. North America is the part that has the lowest stunting rate, which is 11.8% (UNICEF, 2019).

The results of the 2018 Basic Health Research stated that the percentage of malnutrition in children aged 0-59 months in Indonesia was 3.9%, while the percentage of malnutrition was 13.8% with the 2018 target of 17.7%. The percentage of underweight is 6.7%, very thin is 3.5% and the percentage of fat is 8.0% (Riskesdas, 2018).

According to data from the West Sumatra Health Office in 2020, the percentage of children under five who are underweight is 9.43%, who is wasting is 6.1%, and who is stunted is 14.295%. The highest percentage experiencing underweight, wasting and stunting is in Sijunjung Regency (West Sumatra Health Office, 2020). The prevalence of nutritional status in the City of Bukittinggi is 4.44% underweight, 13.3% stunting and 4.2% wasting. There are 7,181 children under five in Bukittinggi City in 2019 (Bukittinggi City Health Office, 2019).

Nutritional problems do not only occur in Indonesia, but also occur in other developing countries and are a double burden. Provision of breast milk substitutes (MP-ASI) is expected to have an important role in overcoming the problem of malnutrition in infants. Food intake in the amount and content of very important nutrients is needed for the growth and development of infants and toddlers. After the baby is six months old, the nutritional content of breast milk is no longer sufficient because the baby's energy needs increase compared to the needs at the age of 3-5 months (Wirdani, 2018).

In Deby Rezki Ananda's research, there are data from the World Health Organization (WHO) in 2016 that the provision of complementary feeding for breast milk (MP-ASI) in the world did not reach the target, which was only 38% of the 50% target. In Indonesia in 2016 based on data from the Ministry of Health of the Republic of Indonesia in 2017, 54% of infants received MP-ASI with a national target of 80% (Kemenkes RI, 2017). Complementary foods for breast milk (MP-ASI) are foods or drinks that contain nutrients that need to be given to babies after 6 months of age to increase their nutritional needs. The basic ingredients of MP-ASI are rice, carrots, beans, and sweet potatoes, one of which is purple sweet potato which is a good food source as a complementary food ingredient for breast milk.

Eating purple sweet potatoes can help with nutritional needs because purple sweet potatoes have a very complex nutritional content. The nutritional content of sweet potatoes is 1.8% protein, 27.9% carbohydrates, 0.7% fat, 68.5% water, 0.4% sugar content, 123 Cal calories, 1.2% crude fiber (Balitkabi, 2011). One example of complementary foods for breast milk that can be given to children is biscuits. Biscuits are products produced from baking dough made of wheat flour and the addition of other foods and with or the addition of permitted food additives.

In nutritional status of problems and in the high on his nutrition of the sweet potato purple beneficial to the baby hence writers want to make an innovation manufacture of basic made sweet sweet purple as food a companion place. Purpose of study is to determine the nutritional levels and organoleptic tests on biscuits substituted with purple sweet potato flour.

MATERIALS AND METHODS

Experimental research by making a treatment of making MP-ASI biscuits substituted with purple sweet potato flour and then seeing its effect on nutritional levels and organoleptic tests. This research has been approved by the ethics committee with no 126/KEPK/V/2021. This research was conducted in two places, namely the working area of the Nilam Sari Public Health Center, Bukittinggi City and the Padang Industrial Research and Standardization Center which was held from May to August 2021.

The research population is all mothers and babies aged 6-12 months in the working area of the Nilam Sari Health Center as many as 293 people. The sample of this study was 10% of the population, namely 29 infants 6-12 months and 29 mothers of infants aged 6-12 months. The tools used in the research: oven, basin, 80 mesh sieve, blender and scales. Materials used in the study: purple sweet potato, Na-metabisulfite, wheat flour, egg yolk, margarine, powdered milk, powdered sugar and developer.

Making purple sweet potato flour: choose fresh purple sweet potato, clean and cut into thin slices. Soak with 0.1% Na-metabisulfite solution for 15 minutes then drain, then dry in an oven preheated to 90∘ C for 4 hours. After that cool and then floured using a blender. The purple sweet potato flour is sifted through an 80 mesh sieve. Then the flour is stored in a container ready to be used for making purple sweet potato biscuits.

Making purple sweet potato biscuits: prepare the tools and materials needed according to the dose. Mix margarine and powdered sugar with a mixer for 2 minutes and add the egg yolks. Combine the flour and purple sweet potato flour along with the other dry ingredients then stir. After the dough is ready to print according to taste and then put in the oven at 140∘ C for 40 minutes. After that the biscuits are ready to be served.

Charging process form: the form is given to the baby's mother. The organoleptic form contains a test of the level of preference for color, taste, color, and aroma and an acceptance form to assess the likes or dislikes of biscuits by babies. In conducting this research, researchers will assess the nutritional content of purple sweet potato biscuits, namely water content, carbohydrates, energy, fat, and protein which will be carried out at the Laboratory of Research and Industrial Standardization of Padang. Organoleptic test to test the level of liking or acceptance using the Smiley Method and the percentage of the number of biscuits consumed. Smiley Method is divided into two categories, namely likes and dislikes.

This acceptance is said to be good if more than 80% give an expression of liking. Organoleptic tests were carried out on four parameters, namely color, aroma, taste, and texture because consumers liked or disliked a product. This study will test the level of preference for purple sweet potato biscuits in infants aged 6-12 months and to determine the color, aroma, taste, and texture will be determined by the baby's mother.

RESULTS
Laboratory test

Parameters tested on flour and purple sweet potato are carbohydrates, protein, fat, calories, and water content

Table 1. Laboratory test results

Nutrient content	Unit	Flour	Biscuits
Carbohydrate	%	66.4	46.8

Nutrient content	Unit	Flour	Biscuits
Protein	%	2.60	3.85
Total fat	%	0.27	23.7
Calories	Kcal	270	416
Water content	%	10.1	4.26

Carbohydrate

Carbohydrates are the main energy source with an energy value of 4 Kcal/gram which contains the largest energy in a balanced menu. From the results of the analysis of carbohydrate content there is a decrease, this is due to the use of high temperatures which can damage carbohydrate molecules resulting in a decrease in nutritional value, then processing involving high temperatures in carbohydrates will experience caramelization or browning (Rezki Ananda, 2018). According to the average nutritional adequacy rate required per day by the Indonesian Ministry of Health in 2019, 105 grams of carbohydrates are needed for infants aged 6-12 months (Ministry of Health RI, 2019). This shows that consuming 100 grams of purple sweet potato biscuits can fulfill carbohydrates in infants aged 6-12 months by 44.5%.

Protein

Protein is part of all living cells and is the largest part of the body after water. This protein has the function of forming new cells, replacing damaged tissue cells, regulating water balance, and as an energy source (Rohman, 2018). From the analysis of the nutritional value of protein there is an increase, this is because in the process of making biscuits there are ingredients that contain protein such as milk powder and egg yolk. The average nutritional adequacy rate (RDA) required per day at the age of 6-12 months is 15 grams of protein (Ministry of Health RI, 2019). This explains that if a baby consumes 100 grams a day, it can meet the protein needs of babies aged 6-12 months by 25.6%.

Fat

Fat in food has a very important role as a source of energy. Fat can produce greater energy, namely 1 gram of fat obtained 9 Kcal compared to protein and carbohydrates. From the results of laboratory test analysis, purple sweet potato flour is very low because according to Mentari research in 2015 that purple sweet potato naturally has low fat properties. However, the results of the analysis of the fat content in purple sweet potato biscuits increased, this was influenced by the composition of other ingredients, namely butter and egg yolk (Nur, 2017).

According to the RDA, the average daily requirement for fat at the age of 6-12 months is 35 grams (Ministry of Health RI, 2019). So if the baby consumes 100 grams of purple sweet potato biscuits in a day, it can meet the body's fat needs of 67.7% of the 35 grams that the baby's body needs 6-12 months.

Calories

Calories are the energy needed to be able to do activities and carry out their functions properly for the body. Calories can be likened to fuel from an engine to move and carry out its duties. Every food we eat contains a number of calories or energy that the body needs to work. The calories contained in the food are provided by carbohydrates, protein, and fat.

In the process of making purple sweet potato flour biscuits, there are additional calories from the biscuit-making ingredients with the total nutritional calories in wheat flour 364Kcal, refined sugar 389Kcal, butter 716Kcal, egg yolk 55Kcal , milk powder 495Kcal (USDA, 2020). According to the number of nutritional adequacy needed per day, children aged 6-12 months need 800 kcal of calories or energy (Ministry of Health RI, 2019) so that if the baby consumes as much as 100 grams a day of sweet potato biscuits it can meet the calorie needs of 52% per day.

Water content

Moisture content is one of the determinants of the quality of a food, including the quality of biscuits, where if the water content in the biscuit is low then it makes the biscuit more durable so it has a high shelf life, whereas if the water content in a product is high it can cause the product or food to not stand. Over time it affects the taste of food, texture, and causes odors and mold quickly. This is caused by the ease of bacteria or microbes to multiply rapidly in products that have high water content. This explained that there was a decrease in the water content of purple sweet potato after it was processed into flour and purple sweet potato biscuits.

The cause of the decrease during processing of sweet potato flour, apart from heating in the oven, the decrease in water content of purple sweet potato flour was also caused by soaking purple sweet potato in 0.1% sodium metabisulfite solution. According to research, sodium metabisulfite solution is absorbing or binding water, that is, the longer the material is immersed in the metabisulfite solution, the more water is bound and forms bonds with sodium metabisulfite (Lastari et al., 2016).

Organoleptic Test

Organoleptic test is a test that asks respondents or panelists to express their responses in the form of liking or disliking the properties of the material being tested (Lamusu, 2018). Organoleptic tests were carried out on four parameters, namely color, aroma, taste, and texture which would be determined by the respondent's mother for infants aged 6-12 months and the level of preference or acceptance test which would be determined by infants aged 6-12 months.

Baby Acceptance Test 6-12 months

Acceptance of purple sweet potato biscuits was measured through the smiley method and the percentage consumed in infants aged 6-12 months. As many as 93% of infants aged 6-12 months gave an expression of liking and categorized the acceptance of purple sweet potato biscuits as good. Meanwhile, 7% of infants who showed dislike expressions were found.

Color

Color plays an important role in determining the level of consumer acceptance of a product, although the product has high nutritional value, good taste, and good texture, if the color is not attractive it will cause the product to be less attractive. This is based on the first step that consumers do when they want to choose a particular product, namely by observing the color appearance of the product (Utami, 2016).

The color of purple sweet potato biscuits tends to be brownish purple after being baked using the oven. This is in accordance with Lidiasari's 2006 research, the brown color of the biscuits is caused by the baking process causing the Maillard reaction,

namely the browning reaction that occurs between carbohydrates, especially reducing sugars with primary amine groups (Lamusu, 2018).

Table 2. Percentage level of respondent's preference for biscuit color MP-ASI made from purple sweet potato flour

Variable	Levels of pleasure			
	Really like	**Like**	**Normal**	**Do not like**
Purple sweet potato biscuits	38%	55%	7%	0%

The highest level of preference for the color of MP-ASI biscuits made from purple sweet potato flour was 55% (like) and the lowest level of preference for purple sweet potato biscuits was 0% (dislike).

Flavor

Taste is an important element in determining consumer acceptance of a food product and is the second factor that affects the taste of food after the color of the product (Utami, 2016). According to Wahidah in 2010 the complexity of a taste is produced by the diversity of scientific perceptions. Taste is influenced by three factors, namely smell, taste, and oral stimulation.

Table 3. Percentage level of respondent's preference for biscuit taste MP-ASI made from purple sweet potato flour

Variable	Levels of pleasure			
	Really like	**Like**	**Normal**	**Do not like**
Purple sweet potato biscuits	55%	45%	0%	0%

The highest level of preference for the taste of MP-ASI biscuits made from purple sweet potato flour was 55% (very much like) and the lowest level of preference for purple sweet potato biscuits was 0% for the usual and dislike levels. From the results of the organoleptic test on the respondent's preference level, it showed that the taste of the purple sweet potato flour biscuit was good, as much as 55% really liked it. Respondents are addicted to the delicious and delicious taste of biscuits when eaten.

Texture

Texture is the sensation of pressure that can be observed with the mouth when it is bitten, chewed, and swallowed or can be touched with the fingers. Texture is just as important as smell, taste and aroma because it affects the image of the food. Soft and crunchy is the most important in texture(Lamusu, 2018). The texture of a product, especially in biscuits, is related to the water content of a product. The high water content makes the biscuits not crunchy and the texture is less favorable, besides that the fat content also affects the texture of the biscuits (Utami, 2016).

Table 4. Percentage of respondents' preference for biscuit texture MP-ASI made from purple sweet potato flour

Variable	Levels of pleasure			
	Really like	**Like**	**Normal**	**Do not like**
Purple sweet potato biscuits	31%	48%	21%	0%

The highest level of preference for the texture of the MP-ASI biscuits made from purple sweet potato flour was 48% (like) and the lowest level of preference for the purple sweet potato biscuit was 0% (dislike). The texture of the purple sweet potato flour biscuit is crispier and not soggy because the dough is made according to the dosage. The crunchy texture of sweet potato flour biscuits is also due to the low water content in the biscuits. In making purple sweet potato flour biscuits, it is necessary to pay attention to the ingredients used to be smooth, then pay attention to the moisture content of the biscuits in order to get a good biscuit texture that does not feel hard and not too soft.

Scent

Aroma is one of the parameters of sensory (organoleptic) testing using the sense of smell. Aroma is acceptable if the resulting material has a specific aroma. Aroma is a very subjective taste and smell and is difficult to measure, because everyone has different sensitivities and preferences. Although they can detect, but each individual has a different preference (Utami, 2016).

Table 5. Percentage level of respondent's preference for biscuit aroma MP-ASI made from purple sweet potato flour

Variable	Levels of pleasure			
	Really like	Like	Normal	Do not like
Purple sweet potato biscuits	34%	48%	18%	0%

The highest level of preference for the aroma of complementary feeding biscuits made from purple sweet potato flour was 48% (like) and the lowest level of preference for purple sweet potato biscuits was 0% (dislike). The aroma contained in purple sweet potato flour biscuits has a less distinctive aroma than purple sweet potato. Because in the process of making biscuits, there is more wheat flour than purple sweet potato flour. Aroma can determine whether or not a product is worth consuming or not.

DISCUSSION

This study develops innovations in complementary food products, especially biscuits made from purple sweet potato and determines the nutritional value, shelf life, and consumer acceptance, especially for infants aged 6-12 months from these biscuits. In the discussion section there is a link between the results and the hypothesis, namely the results of the innovation in processing complementary foods made from purple sweet potato in the form of biscuits for ages 6-12 months. This study has limitations, namely there is no laboratory test for nutritional values of vitamins, anthocyanins and zinc.

The future direction of this research can be used as complementary foods so that it can improve nutritional status in children. Then this study can be improved by conducting further research to see effect on weight gain in infants consuming purple sweet potato MP-ASI biscuits. Suggestions for further researchers to pay more attention to the protein content in purple sweet potato biscuits so that the protein content in purple sweet potato biscuits is in accordance with the Indonesian national standard for MP-ASI biscuits for babies. Then it is recommended that further research be conducted to see the effect on weight gain in infants who consume purple sweet potato MP-ASI biscuits.

CONCLUSION
The results of this study show that the purple sweet potato MP-ASI biscuit can be useful as a complementary food for breast milk because it has a high nutritional content so that it can meet the daily nutritional needs of babies. It is recommended further research to increase the value of preference for color, texture, and aroma as well as laboratory tests for nutritional levels of vitamins, zinc, and anthocyanins in purple sweet potato biscuits.

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Original Research

Good Knowledge Makes Good Behavior In Giving Vitamin A To Toodler

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ABSTRACT

Background: Vitamin A is one of the important nutrients that is fat-soluble and stored in the liver, cannot be made by the body so it must be met from the outside. Data from East Java Provincial Health Office note that the scope toddlers who received vitamin A capsules in 2019 reached 90.80% and has met the 2019 target of 90.8%. Meanwhile, the coverage of giving vitamin A capsules in Ngawi Regency is 75.9% of the target of 90.80% in 2019. The purpose of the study were to identify the characteristics of respondents based on age, education and occupation, to describe the mother's knowledge about vitamin A capsules in toddlers, to describe the attitudes of mothers about vitamin A capsules to toddlers.

Methods: Descriptive quantitative research methods with a survey approach. The sampling technique was total sampling with a sample size of 60 mothers with toddlers aged 6-59 months at the Posyandu I Kartoharjo Village, Ngawi in 2021. The data analysis technique used was descriptive statistics.

Results: The characteristics of the respondents based on the majority age 21-35 years (73%), based on the education of the majority of High School (42%), based on the occupation of the majority of housewives (78%), the description of the mother's knowledge about vitamin A capsules was mostly good (58 %), the majority of mothers' attitudes about vitamin A capsules support (96%).

Conclusion: The reseacrh measurement knowledge and attitudes of mothers about vitamin A capsules in toddlers during the covid-19 pandemic at the Posyandu I Kartoharjo Village, Ngawi is good. However, there is still knowledge and attitudes that are lacking and unsupportive, during the pandemic covid 19, it is hoped that efforts to increase the knowledge and attitudes of respondents about vitamin A.

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INTRODUCTION

Vitamin A deficiency (VAC) is still a problem that spreads throughout the world, especially in developing countries and can occur at all ages, especially during the growth period East Java Provincial Health Office, 2018). According to WHO (2014) as

many as 250 million pre-school children suffer from vitamin A deficiency. The results of the Study of Micronutrient Problems in 10 Provinces in Indonesia conducted by the Research and Development Center for Nutrition and Food of the Ministry of Health of the Republic of Indonesia in 2006 showed that toddlers with serum retinol less than 20 g/dl by 14.6%. Therefore, serum retinol in the blood is an indicator that VAC is still a public health problem (Kemenkes RI, 2016).

One of the effects of lack of vitamin A is eye disorders that generally occur in children aged 6 months - 5 years which are the main cause of blindness. Children who suffer from vitamin A deficiency are very susceptible to infections such as acute respiratory infections, measles, chicken pox, diarrhea and other infections because the child's resistance decreases (East Java Provincial Health Office, 2018). Vitamin A is one of the important nutrients that is fat-soluble and stored in the liver, it cannot be made by the body so it must be met from the outside (East Java Provincial Health Office, 2018).

Vitamin A capsules is a soft capsule with the tip (nipple) that can be cut, non-transparent (opaque), and easy to take, including being able to enter into a toddler's mouth. Vitamin A capsules for infants aged 6–11 months are blue in color and contain retinol (palmitate/acetate) 100,000 IU with a frequency of 1 time , while vitamin A capsules for infants aged 12-59 months are red and contain retinol (palmitate/acetate) 200,000 IU with a frequency of 2 times. The timing of giving vitamin A capsules to infants and toddlers is carried out simultaneously every February and August (Indonesian Health Profile, 2019). Vitamin A capsules are one of the government programs in order to meet the needs of vitamin A in toddlers. Result of the research conducted by mostafa di Bangladesh state that low coverage vitamin A was found to be associated with low parental education and poverty.

Data from East Java Health Profile (2019) coverage of infants received vitamin A capsules in 2019 reached 90.80% and has met the 2019 target of 90.8%. Judging from the Regency/City level in East Java Province, Ngawi Regency occupies the second lowest position after Mojokerto Regency with a coverage of 75.9% vitamin A capsules East Java Provincial Health Office, 2020). According to a brief interview that the researcher conducted with 5 mothers of toddlers in Kartoharjo Village, Ngawi, it was found that 2 mothers of toddlers could not mention the benefits of vitamin A, the shape/color of the vitamin A capsules given to toddlers and the schedule for giving vitamin A.

However, at the time of distribution vitamin A capsules, mothers of toddlers continue to give vitamin A capsules to toddlers because they follow the recommendations of cadres/health workers. Notoatmojo (2011) states that knowledge influences a person to have awareness, so that people will be have according to the knowledge they have. Changes in behavior based on knowledge, awareness and positive attitudes are lasting because they are based on their awareness.

The purpose of this study was to determine the characteristics of mothers of children under five at Posyandu I Kartoharjo Village, Ngawi and to describe the knowledge and attitudes of mothers about vitamin A capsules for toddlers at Posyandu I Kartoharjo Village, Ngawi.

MATERIALS AND METHOD

This type of research is descriptive, using a quantitative method with a survey approach (Sugiyono, 2016). This study was conducted on 09 June 2021 on at the

integrated service post I Kartoharjo Village, District Ngawi, Ngawi. The population of this study were all mothers of children under five who were registered at the integrated service post I Kartoharjo Village, Ngawi with a total of 60 people. The sampling technique of this research is non-probability sampling, census type or total sampling. The sample in this study were mothers who had toddlers aged 6-59 months who were registered at the integrated service post I Kartoharjo Village, Ngawi as much of 55 plus 10% (avoiding *drop outs*) to 60 people.

The variables of this study were knowledge and attitudes of mothers about vitamin A capsules in toddlers. Type of data used are primary data obtained through how to spread the questionnaire to the respondent. Analysis of the data used is descriptive statistics, namely statistics used to analyze data by describing or describing the data that has been collected as it is without the intention of making conclusions that apply to the public or generalizations. In this analysis only the distribution of the frequency and percentage of each variable (Notoatmodjo, 2018).

RESULTS

The results of validation by expert judgments are 2 midwifery lecturers and 1 nutritionist show that the *V-Aiken value* moves from 0.42 to 0.83. So it can be concluded that the content of the 20 questions is declared valid and the value of *r-count* move of figures from .638 to .837. When compared with *r-count* with *r-table* , the 20 questions are declared reliable.

Table 1. Characteristics of Respondents

Characteristics	Category	Frequency	Percentage
Age	<20 years	3	5%
	21-35 years	44	73%
	>36 years	13	22%
Education	Elementary School	10	16%
	Junior High School	22	37%
	High School/Vocational High School	25	42%
	College	3	5%
Work	Housewife	47	78%
	Self-employed	8	13%
	Private employees	4	7%
	Civil Servants	1	2%

From the table above, the percentage of numbers moves from 2-78%. So the researcher concluded that the majority of respondents were aged 21-35 years (73%), the majority of respondents' education was High School/Vocational High School (42%), and the majority of respondents' occupations were housewife (78%).

Table 2. Description of Mother's Knowledge About Vitamin A Capsules in Toddlers

Characteristics	Knowledge					
	Not Enough		Enough		Good	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Age						
<20 years	0	0%	0	0%	3	5%
21-35 years	2	4%	15	25%	27	45%
>36 years	0	0%	8	13%	5	8%
Total	2	4%	23	38%	35	58%
Education						
Elementary School	1	2%	9	15%	1	2%
Junior High School	0	0%	9	15%	12	20%
High School/ Vocational High School	1	2%	5	8%	19	32%
College	0	0%	0	0%	3	5%
Total	2	4%	23	38%	35	58%
Profession						
Housewife	2	4%	19	32%	27	45%
Self-employed	0	0%	3	5%	4	8%
Private employees	0	0%	1	2%	3	5%
Civil Servants	0	0%	0	0%	1	2%
Total	2	4%	23	38%	35	58%

From the table above, the percentage of numbers moves from 4-58%. So it can be concluded that the knowledge of the majority of 60 respondents is in the good category, namely as many as 35 respondents (58%).

Table 3. Overview of Mothers' Attitudes About Vitamin A Capsules in Toddlers

Characteristics	Attitude			
	Not Supportive		Supportive	
	Frequency	Percentage	Frequency	Percentage
Age				
<20 years	0	0%	3	5%
21-35 years	2	4%	42	70%
>36 years	0	0%	13	21%
Total	2	4%	58	96%
Education				
Elementary School	0	0%	11	18%
Junior High School	1	2%	20	33%
High School/ Vocational High School	1	2%	24	40%
College	0	0%	3	5%
Total	2	4%	58	96%
Profession				
Housewife	1	2%	47	78%
Self-employed	1	2%	6	10%
Private employees	0	0%	4	6%
Civil Servants	0	0%	1	2%
Total	2	4%	58	96%

From the table above, the percentage of moving numbers moves from 4-96 %. So it can be concluded that the attitude of the majority of the 60 respondents is in the supportive category as many as 58 respondents (96 %).

DISCUSSION

Based on the guidelines for health services for toddlers during the *Covid-19* emergency response period (2020), routine services for healthy toddlers follow Government policies that apply in the work area and take into account the local transmission of *Covid-19*. The integrated service in Kartoharjo Village, Ngawi are carried out by visiting children's homes (door to door) in accordance with health protocols. This aims to reduce direct contact with many people, crowds, and as an anticipation, especially for toddlers who are very susceptible to infection so that it is hoped that this can reduce the spread of *Covid-19*. Data collection was carried out on June 9, 2021 through questionnaires distributed to respondents when weighing toddlers with the integrated service post I in Kartoharjo Village, Ngawi.

The results showed the characteristics of the 60 respondents, the majority aged 21-35 years (73%), the majority had high school education (42%), and the majority worked as housewives (78%). According to research by Juliansyah & Rizal (2018), the bivariate results variables related to the behavior of smoke is aged with *ρ- value* of

0.000 and OR is 6.176 in the Sungai Durian Health Center area, Sintang (2017) with a sample of 218 respondents. According to Huclok in Henry and the Goddess (2011), as one gets older, the level of maturity and strength of a person will be more mature in thinking and working.

According to the results of research by Rahayu Setyowati (2015) that there is a relationship between education and mother's knowledge about caring for premature babies (ρ-value 0.027) and there is a relationship between work and mother's knowledge about caring for premature babies (ρ-value 0.049). Notoatmodjo (2016) emphasized that education is a planned effort to influence other people, both individuals and community groups, so that they do what is expected by education actors. According to Thomas, work is a bad thing that must be done especially to support life. Work is not a source of pleasure, but rather a boring, repetitive and challenging way of earning a living. Working for mothers will have an influence on life (Wawan and Dewi, 2011).

From 60 respondents obtained an overview of mother's knowledge on vitamin A supplementation in infants the *covid-19* pandemic at the integrated service post I Kartoharjo Village, Ngawi fit in either category. The results of this study are the same as the results of research conducted by Heny Sepduwiyana (2010) that more than half of the knowledge about giving vitamin A to toddlers is in the good category, namely as many as 86 respondents (86.9%) at the integrated service Sayang Toddlers, Ujung Batu Village, Ujung Batu Community Health Center Working Area. Batu April-May 2010 with a total sample of 109 respondents.

In accordance with the theory Notoadmojo (2018) that knowledge is the result of human senses or results to know someone of the object through the senses dimilkinya, experience that comes from a variety of sources such as mass media, electronic media, health workers, media poster, a close relative, and so on. Form certain beliefs so that a person behaves in accordance with these beliefs. Researchers assume that good knowledge is obtained because of age, education and work. According to the results of the Soul (2013) that there is a significant influence between the factors of age with the value $ρ$- *value* 0,001 knowledge of mothers in infant care in the postpartum hospital Lanto Dg Pasewang district Jeneponto Regency in 2013 with a sample of 30 respondents (Scientific Journal of Medical Diagnosis, Vol . 3 No. 5, 2013).

This is in accordance with what Budiman and Riyanto (2013) described that the age affects comprehension and thinking humans, increasing the person's age, the more developed also capture power and patterns of thought, so that the knowledge gained, the better. Andriyani Puspita research results (2018) that the value of $ρ$ *Value*-0,015 (education), the value of $ρ$-*Value* 0,000 (jobs) that concluded that there is a significant relationship education and employment by giving Vit amin A in infants (6-59 months) in health centers Kandai Kendari City in 2018 with a sample of 30 respondents (Journal of SMART Midwifery, Vol. 6 No. 1, 2019). This is in accordance with Wawan & Dewi (2011) that the higher the education level of the respondent, it is expected that it will be easier for the respondent to accept the knowledge they have , while working for mothers will have an influence on family life. Respondents who work as housewives will spend more time at home and the surrounding environment so that mothers will pay more attention to the health of their families.

The description of mothers' attitudes about vitamin A capsules in toddlers based on the results of this study showed that more than half (97%) had a supportive attitude. The results of this study are the same as the results of Heny Sepduwiyana's research (2010) that the majority of mothers' attitudes are included in the positive

attitude category as many as 86 respondents (78.89%) at the integrated service Sayang Toddler, Ujung Batu Village, Ujung Batu Health Center Working Area April-May 2010 with a total sample of 109 respondents. Berkowitz explained that a person's attitude towards an object is a feeling of support or partiality as well as a feeling of support or impartiality to the object (Azwar, 2013).

Researchers assume that the supportive attitude is due to the influence of other people who are considered important. According to the results of Puspita's research (2017), it is stated that family support ($\rho<0.005$; 95% CI= 2.063–5.141) and the role of health workers ($\rho<0.005$; 95% CI= 2.172–5.391) are related to compliance with hypertension sufferers in undergoing treatment (Journal of Public Health, 2017). Azwar (2013) asserts that someone we consider important, someone we hope for approval for our every move and opinion, among people who are considered important for individuals are parents, people with higher social status, peers, close friends, teachers, coworkers, wife or husband, and others.

According to the results of Puspita Andriyani's research (2018) that there is a significant relationship between knowledge and the provision of vitamin A to toddlers (6-59 months) at the Kandai Health Center, Kendari City in 2018 with a sample of 30 respondents. According to the research results of Wahyunita, Sulastriningsih, Harahap (2019), it shows that the mother's attitude (ρ-value 0.037) affects the administration of vitamin A to toddlers in Ciriung-Cibinong Village in 2016 with a sample of 50 respondents. Researchers assume that knowledge and attitudes affect the administration of vitamin A to toddlers.

This may be because respondents know the importance of consuming vitamin A for their toddlers, and consider that vitamin A cannot be met by food consumed by toddlers everyday so that additional vitamin A capsules are needed. Regarding vitamin A capsules, it is expected that someone will behave positively so that the coverage of vitamin A capsule administration can meet the target. From the results of this study, there are still mothers who have less knowledge (4%) and attitudes are not supportive (4%).

Based on data, mothers who have less knowledge and are unsupportive are influenced by age, education and occupation factors (Primary Data, 2021). Notoatmojo (2011) states that knowledge influences a person to have awareness, so that people will be have according to the knowledge they have. Changes in behavior based on knowledge, awareness and positive attitudes are lasting because they are based on their awareness. In addition, it is possible because posyandu services are different from before and during the pandemic.

Before the pandemic, all health service activities such as counseling and giving vitamin A capsules were carried out at the posyandu together with all members of the integrated service and the monitoring team from the ancient Ngawi Health Center, but currently there is no counseling because the posyandu is carried out by visiting children's homes (door to door) and in the administration of vitamin A capsules is carried out at the Polindes (Village Maternity Boarding School) so it takes time because the respondent's house is quite far from the village maternity hut.

This is in accordance with the research conducted by Maulida and Setiarini (2020) on the impact of the *Covid-19* pandemic on the implementation of supplementation with vitamin A capsules in Pekanbaru City, which showed that the implementation of vitamin A capsule supplementation at the Pekanbaru City Health Center before the pandemic had been going well. However, there was a drastic change in health services

and the implementation of vitamin A supplementation during the *Covid-19* pandemic, causing a significant reduction in the scope of achievement of success, far below the national target of 82%.

This decrease in coverage was caused by several things, such as: 1) Integrated service that were not open due to the activity restriction policy (PSBB); 2) not optimal performance of cadres in distributing vitamin A door to door; 3) some cadres who are still reluctant to go to the field due to fear of the *Covid-19* pandemic; and 4) there are still many people who are afraid to be given direct health service visits by health workers (Jurnal Kesehatan, Vol. 12, No.1, 2021).

CONCLUSION

The characteristics of the respondents based on the age of the majority are aged 21-35 years, the characteristics of the respondents based on the education of the majority are SMA/SMK education, and the characteristics of the respondents based on the occupation are the majority working as housewives.The description of mother's knowledge about vitamin A capsules in toddlers is more than half in the good category.The description of mothers' attitudes about vitamin A capsules in toddlers is mostly in the supportive category.

Suggestion To the midwives or health cadres of Kartoharjo Village, Ngawi in particular to further increase the knowledge and attitudes of mothers and toddlers about vitamin A capsules through health education, as well as the installation of posters or pamphlets related to vitamin A so that vitamin A deficiency disease can be prevented and can increase the coverage of vitamin A administration. on Toddler.

ACKNOLEDGEMENT

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