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Original Research

**Adolescent Sexual Behavior In The Era Of The Industrial Revolution
4.0**

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ABSTRACT

Background: *The index of adolescent knowledge about reproductive health has increased. Ease of accessing information is an important point in increasing adolescent knowledge about reproductive health, but the use of social media without parental supervision can also lead to risky sexual behavior. In this study, the author aims to determine adolescent knowledge about reproductive health, access to social media as a source of information, and sexual behavior in adolescents in Klaten.*

Methods: *The design in this study is a cross-sectional qualitative research. The population is adolescents aged 16-18 years in the Klaten Regency area. The sample in this study were 96 samples years by using non-probability method sampling count by lemeshow formula selected based on the inclusion and exclusion criteria through youth organizations. The instrument used was questionnaire consist of 4 indicators (usage of social media, source of health reproduction information, knowledge of health reproduction, sex behavior. After validity and reliability test, the questionnaire obtained 30 questions. Data was collected online by using google forms. Analysis data procedure was using chi square and logistic regression analysis techniques.*

Results: *The most respondents aged 18 years (48.60%), female gender (88.78%), accessed social media for 7-12 hours as much as 57.01%, all respondents accessed search engines and whatsapp, the majority of respondents received information about reproductive health from the internet is 90.65%, 59.81% of respondents' parents have a role in discussing reproductive health, 83.18% of respondents have good knowledge about reproductive health, 85.98 % respondents have risky sexual behavior.*

Conclusion: *The role of parents and the duration of adolescents accessing social media has a significant relationship in adolescent sexual behavior.*

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INTRODUCTION

According to the results of the 2018 Susenas, the number of teenagers in Indonesia reached 63.82 million. There are 87.44 percent of youth who have cellphones

and 93.02 percent of youths who use cellphones during the last three months. In addition, there are also around 34.01 percent of youth who use computers and 73.27 percent of youths who use the internet during the last three months (BKKBN, 2019).

In this era of the Industrial Revolution 4.0, information technology is very influential in human life. Humans began to rely on information technology in all fields, from the economy, education, health, government and others. Because information technology greatly facilitates humans in producing, processing data and disseminating information. So that information technology in this era is very fast development.

However, every development will inevitably be accompanied by a negative impact, namely the openness of the media to be accessed by everyone, with content that cannot be accounted for at all. The amount of irresponsible information can plunge teenagers who are not yet mature psychologically and mentally so that they often swallow all the information that enters them. According to the (BKKBN, 2019) the Adolescent Reproductive Health (KRR) knowledge achievement index experienced a good trend from 2012-2018, in 2012 it reached 50.5; in 2013 had dropped to 46.9; in 2014 it rose again to 48.4; in 2015 to 49.0; 2016 continued to rise to 51.1, and in 2017 it reached an index of 52.4. In 2018 it was 57.1.

However, in reality, the increasing trend of adolescent reproductive health knowledge index was not followed by a decrease in the trend of teenage pregnancy. In 2017, the pregnancy rate for adolescents aged 15-19 years reached 48 out of 1,000 pregnancies. And the latest data shows, there are 1.7 million teenagers under the age of 24 who give birth every year. Meanwhile, in 2018 it reached 39.17 percent or 2 out of 5 girls aged 10-17 years had been married before the age of 15. Around 37.91 percent married at the age of 16 years, and 22.92 percent married at the age of 17 years.

Around 35 percent of Indonesian children experience their first pregnancy under the age of 15 both in urban and rural areas. It should be noted that girls under the age of 15 who experience early pregnancy and childbirth are not yet fully mature for childbirth.

Comprehensive sexuality education is a curriculum-based teaching and learning process about the cognitive, emotional, physical and social aspects of sexuality. It aims to equip children and youth with the knowledge, skills, attitudes and values that will empower them to realize their health, well-being and dignity; develop mutually respectful social and sexual relationships; consider how their choices affect their own well-being and that of others; and understand and ensure the protection of their rights throughout their lives (WHO, 2018).

Based on Masae's research, the study found that knowledge, attitudes, and access to social media have a relationship with adolescent sexual behavior at SMA Negeri 1 Kalabahi in 2017. The provision of information needs to be increased regarding adolescent sexual behavior, especially for adolescent girls. Schools are expected to take an active role through reproductive health education and improve control on the use of social media access by students at school so that students only use social media access for educational purposes at school (Masae et al., 2019).

From the data above, we can see that the majority of teenagers use gadgets and can access a lot of information from social media. The era of the industrial revolution 4.0 is characterized by the internet of things. With a lot of information about reproductive health that can be accessed through social media, both from reliable sources.

This has a positive impact related to increasing adolescent knowledge about reproductive health, but freely accessing this information will actually lead to further curiosity where if it is not bridged and accompanied properly by parents as the closest part of adolescents, it will lead to deviations in sexual behavior. Therefore, researchers want to see what the impact of using social media as a source of information is with the role of parents on adolescent sexual behavior in Klaten.

MATERIALS AND METHOD

The design in this study is a cross-sectional qualitative research. the population is adolescents aged 16-18 years in the Klaten Regency area. The sample used in this study were adolescents aged 16-18 years. The sampling technique in this study using the non-probability method with the Lemeshow formula, the results of the calculation of the number of samples were 96 respondents or rounded up to at least 100 samples.

Respondents get informed consent through an attachment to the google form questionnaire where if the respondent is not willing to fill in then the respondent can end answering the google form, but if the respondent is willing to fill it will be directed to the questions on the questionnaire

Data was collected online by using google forms during July to August 2020. Data analysis was carried out after all data had been collected through several stages marked by editing to check the completeness of the respondent's identity whether the answers on the observation sheet were complete, clear and consistent with what was being studied. Then provide coding or certain numbers on the observation sheet to make it easier for researchers to enter data into the computer (entry) and data processing is done using computerized techniques.

Univariate analysis is used to describe the characteristics of respondents, namely age and sex data presented in the form of frequency distribution tables and proportions. Bivariate analysis in this study used chi square. Multivariate analysis was carried out through logistic regression to see the relationship between the independent variables and the dependent variable and which independent variable had the greatest influence on the dependent variable. This research has passed the ethical feasibility test with the registration number: 581/E.A/KEPK/2020.

RESULTS

The most respondents aged 18 years (48.60%), female gender (88.78%), accessed social media for 7-12 hours as much as 57.01%, all respondents accessed search engines and whatsapp, the majority of respondents received Information about reproductive health from the internet is 90.65%, 59.81% of respondents' parents have a role in discussing reproductive health, 83.18% of respondents have good knowledge about reproductive health, 85.98 respondents have risky sexual behavior.

Table 1. Characteristics of respondents of adolescent sexual behavior in Klaten Area

Characteristics of respondents	n	Percentage (%)
Age		
16	25	23.36
17	30	28.04
18	52	48,60
Gender		
Woman	95	88,78

Characteristics of respondents	n	Percentage (%)
Man	12	11.22
Long Access to Social Media		
0-6 hours	18	16.82
7-12 hours	61	57.01
13-18 hours	24	22.43
19-24 hours	4	03.74
Type of social media used		
Search engines	107	100.00
Whatsapp	107	100.00
Instagram	83	77.57
Facebook	23	21.50
Twitter	41	38.32
Etc	17	15.88
Resources		
School/teacher	86	80.37
Parent	50	46.73
Friends of the same age	49	45.79
Internet	97	90.65
Television	29	27.10
Books	67	62.62
Health workers	59	55.14
Etc	6	05.61
The role of parents		
Once	64	59.81
Never	43	40,18
Knowledge level		
Well	89	83.18
Enough	18	16.82
Not enough	00	00.00
Sexual Behavior		
Risky sexual behavior	92	85.98
Sexual behavior is not risky	15	14.02

Table 2. Distribution of respondents based on sexual behavior

Sexual behavior	Yes		No		Total
	n	%	n	%	
Dating/have been in a relationship	98	91.58	9	8.42	107
Neighborhood/friends who are dating	99	92.52	8	07.48	107
View/search for stories/images/videos that contain sexual content	76	71.03	31	28.97	107
Have you ever kissed the opposite sex?	86	80.37	21	19.63	107
Have you ever hugged someone of the opposite sex?	55	51.40	52	48,60	107
Have you ever felt / touched the breast?	14	13.08	93	86.92	107
Have you ever felt/touched the genital area?	13	12.15	94	87.85	107
Have you ever masturbated?	20	18.69	87	81.31	107
Have you ever had premarital sex?	3	02.80	104	97,20	107

The table above shows that 91.58% of respondents are currently dating, 71.03% of respondents said they had seen/searched for pictures and videos that contain sexual content, 31 respondents said they had seen through their social media advertisements, 18 respondents said they had seen sexual content through films, 13 respondents said they saw books, 7 respondents said they saw through chain messages on whatsapp, twitter, and telegram.

7 respondents stated that they saw sexual content intentionally looking on websites that provide sexual content. 80.37% of respondents said they had kissed with the opposite sex, 51.40% had hugged the opposite sex, 13.08% had felt/felt in the breast area, 12.15 had felt/touched on the genitals, 18.69% had masturbating / masturbating, as well as 2.

Table 3. Bivariate analysis table

Variable	Sexual Behavior				P
	No Risk		at risk		
	n	%	n	%	
Knowledge level					
Not enough	0	0	0	0	0.309
Enough	7	06.54	11	10.28	
Well	24	22.43	65	60.75	
The role of parents					
Yes	24	22.43	40	37.38	0.018
No	7	06.54	36	33.66	
Social Media Access Time					
0-6 Hours	8	07.47	10	09.35	0.131
7-12 Hours	19	17.76	42	39.25	
13-18 Hours	4	03.74	20	18.69	
19-24 Hours	0		4	3.74	

Adolescents with a good level of knowledge have sexual behavior that is not at risk as much as 22.43% but the results of the chi square calculation show that p count (0.309 > 0.05) is greater than the p table so that the level of knowledge does not have a significant relationship with sexual behavior. The role of parents has a p count (0.018 < 0.05) smaller than the p table so that the role of parents has a significant relationship to sexual behavior.

Meanwhile, on the length of access to social media, the p count (0.131 > 0.05) is still larger than the p table so that the results show that the length of access to social media does not have a significant relationship with adolescent sexual behavior.

Tabel 4. Multivariate analysis table

Independent Variable	Regression Coefficient (b)	95% CI		P
		Lower limit	Upper limit	
Knowledge level	-0.562	0.185	1,760	0.328
The role of parents	1.183	1.216	8,765	0.019
Social Media Access Time	-0.855	0.213	0.848	0.015

Joint effect of independent variables on the dependent variable using logistic regression. The results of the analysis show that simultaneously the role of parents and duration of access to social media has $p < 0.05$ so that it has a statistically significant relationship with social behavior.

DISCUSSION

The results of the chi-square test showed that there was no significant relationship between the level of adolescent knowledge about reproductive health and adolescent sexual behavior. The results of good knowledge are not necessarily followed by good sexual behavior, these results are also in line with Parihat's research which explains that there is no significant relationship between knowledge about reproductive health and premarital sexual behavior in high school students in South Tangerang City (Parihat, 2015).

In line with Auliyah's research, there is no relationship between knowledge and risky premarital sexual behavior in Unwanted Pregnancy in S1 Public Health Study Program students, Muhammadiyah University, East Kalimantan with p value $(0.879) > (0.05)$. Nowadays it is very easy to obtain information related to reproductive health from various mass media such as websites that contain videos or photos about pornography, television, books, magazines, and others (Auliyah & Winarti, 2020).

It was found that respondents who are highly knowledgeable but many have risky sexual behavior, where things that can cause this to happen are because the information obtained is not necessarily all correct and the information obtained is sometimes only half-assed so that it encourages teenagers to think about doing it because they want to try it. Large and can result in a person having high knowledge but still engaging in risky sexual behavior.

According to (Nurhayati et al., 2017) teenagers who have high knowledge make them always look for various information from various sources related to premarital sexual behavior which can be dangerous due to often imagining what it would be like to have sexual intercourse. The higher a person's level of knowledge, the more risky his premarital sexual behavior is.

This study indicates that there is a significant relationship between the experience of discussing with parents about adolescent reproductive health and adolescent sexual behavior.

Based on Masni's research (2015) which shows that there is an influence of the role of parents on risky sexual behavior ($p < 0.05$ and $= 0.403$) it shows that there is an influence of the role of parents on risky sexual behavior in students with a moderately close relationship between the role of parents on behavior social risk (Masni & Hamid, 2018). In line with Mariani's research, 2018, the role of parents has a relationship with adolescent sexual behavior (p value 0,004) in addition to being influenced by peers (p value 0,000 (Mariani & Murtadho, 2018).

This shows that the role of parents in assisting adolescents in finding an identity and seeking information about reproductive health has significant results in the formation of children's sexual behavior. The existence of the role of parents where parents are the closest environment for children to provide a sense of security and comfort to children so that children's sexual behavior can be more directed, in addition, the closeness and role of parents who are open to reproductive health problems will be able to solve children's curiosity in issues of reproductive health and sexual behavior so

that the information obtained by children can be more filtered and the children's curiosity can be fulfilled by parents.

The results of the analysis between the length of time accessing social media and risky sexual behavior there is no significant relationship. This is not in line with the results of Naja's research which states that there is a significant relationship between exposure to social media and premarital sexual behavior in high school adolescents in Semarang City. The existence of this relationship is because the emergence of sexual content on social media invites the curiosity of teenagers and provokes their desire to have sexual activity. Social media stimulates teenagers to imitate sexual behavior in social media (Naja, 2017).

Risky sexual behavior that occurs among adolescents indicates a serious problem in adolescent reproductive health. Many factors influence sexual behavior in adolescents. In this study, the variables of the role of parents in discussing with their children and the duration of accessing social media simultaneously have a significant influence on children's sexual behavior.

Harmonious parenting promotes optimum emotional life over the development of the adolescent personality and instead, quarrelsome parents block communication within the family, and youth run away from the family. Incomplete families, such as divorce, death, and families with underlying economic circumstances, can affect the development of the young soul (Yatiningsih, 2018).

Communication between parents and teenagers is said to be good when both mates have a good relationship in the sense of being able to understand, understand, trust, and love each other, whereas poor communication indicates a lack of attention, understanding, trust, and affection between the two. Mutually beneficial communication, in this case between parents and teenagers, is feedback, there is openness, there is openness, it is spontaneous and there is feedback from both parents and teenagers (Trismiyana, 2017).

A parent teaches a child in their teen years to make them understand what sexuality is, to avoid perverted sexual behavior. According to Freud in psychosexual theory, it is said that adolescence enters the genitalia stage that begins at puberty, when sexual impulses are clearly visible in adolescents, especially toward the enjoyment of sexual relations. Guidance and direction are given to a teenager, a parent must have good knowledge and build a good relationship with his child. So that parents are able to carry out their role as educators in providing sex education in their teens (Winarti & Alamsyah, 2020).

Knowledge is influenced by the level of education, age, experience, work, income, culture, and association. Inappropriate knowledge, unrealistic expectations, low self-esteem, fear of not working out or pessimism, show that youths have immature personalities and volatile emotions, thus becoming susceptible to negative, such as having premarital sex. Good knowledge of sexuality can lead to a young person's healthy and responsible sexual behavior (Rina Marlina Hutasuhut, 2020).

In addition, together with the role of parents, the duration of access to social media also has a significant role in the formation of adolescent sexual behavior, this is in accordance with Puspita's research (Puspita, 2019). In line with the results of Naja's research, there is a significant relationship between exposure to social media and premarital sexual behavior in high school teenagers in Semarang City. The existence of this relationship is because the emergence of sexual content on social media invites the

curiosity of teenagers and provokes their desire to have sexual activity. Social media stimulates teenagers to imitate sexual behavior on social media (Naja, 2017).

The role of parents in sexuality education is between being an evaluator of sexuality education, an escort, an educator and a monitor in sexuality education. Yet, as most parents often view sexual education as taboo, parents assume that children learn about sex only when they are older and older. Based on that assumption, parents will tend to resist or avoid it when children want to discuss sex.

Parents often think sexuality education will come to children with age when they grow up. As if parents were to hand over sexuality education to the school as a source of learning for their children, though sexuality education itself had not been incorporated exclusively in the school curriculum (Hidayat & Nurhayati, 2020).

Seeing the unlimited freedom of information that can be accessed by adolescents on social media, as well as the psychological development of adolescents who are still very strong in their curiosity and the process of seeking self-identity, parents need to play a role in assisting the development of adolescents and providing appropriate reproductive health information (Wahyuni, 2018).

Efforts were made to prevent further exposure of social media to a young person's sexual behavior by revealing or communicating about the negative and positive effects of social media exposure. In addition to asking parents to be better able to monitor their children at the frequency of daily social media use, and also to provide information about the effect that sexual behavior on adolescents will have on their future so that through the information presented it would be better able to train the youth mentally and avoid improper sexual behavior (Rosita Passe, Nurul Fitri Sugiarti Syam, 2021).

According to Supriyono's research that the role of parents in supervising their children using gadgets and social media is very important to anticipate deviations in children's behavior, especially sexual behavior (Supriyono, 2020). Communication with parents need to be improved in terms of actively involve parents in the process of supervising children (Winarti & Alamsyah, 2020).

CONCLUSION

The majority of respondents access social media 7-12 hours a day, all respondents access search engines and WhatsApp. 90.65% of respondents get information about adolescent reproductive health through the internet. There are no respondents who have less knowledge about reproductive health, 83.18% of respondents have a good level of knowledge. 85.98% of respondents have risky sexual behavior.

Based on the bivariate test, the role of parents has a significant relationship to adolescent sexual behavior, while based on the objective of the variable, the role of parents and the duration of adolescents accessing social media has a significant relationship in adolescent sexual behavior.

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Original Research

Hypnotherapy Can Reduce Anxiety Score In High Risk Pregnant Women

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ABSTRACT

Background: A high-risk pregnancy can affect the psychological, social, and emotional conditions, feel afraid and anxiety. Excessive anxiety can trigger uterine contractions, abortion, and hypertension that can trigger the occurrence of preeclampsia. Hypnotherapy is one of the relaxation techniques that are done by opening the subconscious so that all forms of positive affirmations given by the therapist can be absorbed properly. Techniques like this can become good habits by empowering pregnant women so that they can get used to making positive affirmations.

Methods: This study uses quasi experimental design, respondents in the study were pregnant women who were at high risk based on the Poedji Rochyati scorecard and experienced anxiety based on the HARS questionnaire in July-August 2021. This intervention was given three sessions in 1 week for 40-50 minutes. This research process has been through informed consent from respondents.

Results: After three sessions of hypnotherapy each sample showed an effect. This can be seen from the total number of anxiety scores after the final therapy session is given. At the end of the session, two pregnant women experienced a category decrease to mild anxiety, namely Mrs N and Mrs Q. The other three pregnant women did not experience a category decrease but experienced a decrease in anxiety scores. However, all pregnant women in the study sample experienced a decrease in anxiety scores.

Conclusion: Hypnotherapy can be concluded that hypnotherapy can help pregnant women at high risk of reducing anxiety during the Covid-19 pandemic

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INTRODUCTION

According to the Poedji Rochjati Scorecard, a person's pregnancy can be categorized into several categories of high risk (Gilbert & Harmon, 2010; Saraswati et al., 2017). Pregnant women who realize that their pregnancy is at high risk will become

more alert to themselves (Fourianalistyawati & Caninsti, 2017). A high-risk pregnancy can affect the mother's psychological, social, and emotional conditions. Mothers often feel afraid, anxious, worried excessively, and fail to be an average pregnant woman, resulting in pregnancy processes that would handle increasingly difficult (Dwitama et al., 2021).

Excessive anxiety can trigger uterine contractions at the age of preterm pregnancy. It can cause abortion, premature birth, bleeding during labor, or even the fetus would be born in a state of death. In addition, excessive anxiety can hugely cause hypertension in pregnancy that can trigger the occurrence of preeclampsia (Hasim, 2017). Covid-19 pandemic caused restrictions on various types of activities, one of which is conditions in maternal and neonatal health services such as a frequency decrease of pregnancy examinations and class practices of pregnant women (Direktorat Kesehatan Keluarga, 2020).

Restrictions on activities during the Covid-19 pandemic also contributed to increased anxiety experienced by high-risk pregnant women. Following Diki Retno's research in 2020, pregnant women's anxiety prevalence was 64% experienced mild-moderate anxiety, 11% experienced severe anxiety (Yuliani et al., 2018). Handling anxiety in high-risk pregnant women can be done by using pharmacological therapy, but this usually could cause dependence to affect both the fetus and the mother. Another treatment can be done by hypnotherapy (Legrand et al., 2017; Lestari & Putri, 2018).

Preliminary studies have been conducted on pregnant women with a high risk in the Kersanagara Health Center region. There were five pregnant women with anxiety. Three of them experienced moderate anxiety, one shared severe anxiety, and one more experienced mild anxiety. Some of the pregnant women said that they had been given counseling on dealing with the anxiety they felt, especially after being informed that the pregnancy is a high-risk one aggravated by this pandemic.

However, there was no special treatment given to reduce their anxiety, so they were still confused about reducing anxiety. Thus, this study was conducted to determine the effect of hypnotherapy on the anxiety of high-risk pregnant women during the Covid-19 pandemic.

MATERIALS AND METHOD

This study uses quasy experimetal deisgn, the research was carried out with the approval of respondents and carried out under the supervision of the ethics committee of the Semarang Ministry of Health's Poltekkes. The research was conducted in Kampung Cieurih, located in the working area of Kersanagara Health Center of Tasikmalaya City, Indonesia, in July-August 2021.

The population in this study was pregnant women in Kersanagara Village. The sampling technique used was purposive sampling, and the method found five mothers with high risk based on Poedji Rochyati Scorecard in July-August 2021, and they were willing to be respondents. Anxiety was measured using the Hamilton Anxiety Rating Scale (HARS) consisting of 14 standardized statements, with a validity level of 0.93 and reliability of 0.97.(Novitasari, 2013).

The intervention was carried out towards three sessions in 1 week for 40-50 minutes to each pregnant woman. The analysis in this study was conducted with quantitative analysis of high-risk factors, high-risk distribution of pregnant women's anxiety, and HARS score results.

RESULTS

This research has been conducted in the working area of Kersanagara Health Center, and data was taken in July 2021. In conjunction with implementing the Restriction of Community Activities (PPKM) in Java-Bali, which took place from 3 to 20 July 2021, the sample used was five pregnant women with high risk who were in 1 area of Kampung Cieurih.

Table 1. Frequency distribution of high-risk factors for pregnant women

Risk Factor	Total	Percentage
Too many children, four or more	2	40%
Too old to be pregnant, ≥ 35 y.o.	1	20%
Experienced failure in pregnancy	1	20%
Preeclampsia	1	20%
Total	5	100%

Based on table 1, from 5 research samples, there are two pregnant women with several children more than 4, namely Mrs. H and Mrs. S. 1 pregnant woman has her first child at the age of more than 35 years, namely Mrs. A, one pregnant woman has had a miscarriage, namely Mrs. N, and one pregnant woman has preeclampsia that is Mrs. T

Table 2. Distribution of anxiety of high-risk pregnant women

Category	Pre-Intervention		Post-Intervention	
	n	%	n	%
Moderate Anxiety	5	100	3	60
Mild Anxiety	0	0	2	40
Total	5	100	5	100

In table 2, there can be seen pregnant women who are at high risk, especially during the Covid-19 pandemic who experienced anxiety. Anxiety measurements in pregnant women were conducted using the Hamilton Anxiety Rating Scale questionnaire. Before hypnotherapy intervention was given, all five pregnant women experienced moderate anxiety.

After the intervention, three pregnant women still experienced moderate anxiety, and two pregnant women experienced mild anxiety. Nevertheless, every process of hypnotherapy intervention Administered affects the anxiety of pregnant women at high risk. A decrease indicates this in the score on each study subject following the following graph.

Table 3. Hamilton Anxiety Rating Scale (HARS) Score Result

Respondent	Anxiety Score		
	Intervention 1	Intervention 2	Intervention 3
Ny. H	27	24	19
Ny. S	26	22	16
Ny. A	24	20	17
Ny. T	22	17	12
Ny. N	21	12	13

DISCUSSION

In detail, the decrease of anxiety scores in high-risk pregnant women, based on the study results, showed a reduction in symptoms at each hypnotherapy session. Hypnotherapy is more effective in overcoming high-risk pregnant women's anxiety. The implementation of self-hypnosis in community service was proven to lower anxiety in preparing for labor (Permatasari, 2020).

In the first anxiety measurement before the intervention, the entire study sample experienced moderate anxiety. Anxiety with the highest score occurred in Mrs. H with the risk factor of too many children, namely 4, and there is a high probability of the anxiety score being aggravated by the incident that happened to the husband of Mrs. H, who had just been dismissed from construction work. The same thing happened to Mrs. S with risk factors of having five children. Other research samples, namely Mrs. A, Mrs. T, and Mrs. N, said they had significant concerns during the pandemic, particularly those felt by Mrs. A, who had just become pregnant with her first child at the age of 35.

During the study process, researchers observed every high-risk pregnant woman who got hypnotherapy. This observation activity was conducted by following respondents directly to get data on the anxiety quality of high-risk pregnant women before hypnotherapy during three intervention sessions. All respondents came from economically minor families. The five pregnant women already knew that their pregnancy now belongs to the high-risk category.

The village midwife has given every pregnant woman information to contact the midwife as soon as possible if something happens to the pregnancy. High-risk factors in pregnancy not only affected the anxiety of pregnant women, but the state of family life during the pandemic also contributed to the increase in the anxiety of pregnant women. It can be known when 2 of the pregnant women was interviewed and complained about their family circumstances.

The husbands of the two pregnant women were laid off from work, and they still had young children, and some did not have jobs yet. The other three pregnant women said that the economic situation during this pandemic made them more anxious because they had to keep connecting the entire family's lives. This is in line with other researchers who stated that psychological changes during pandemics are influenced by changes in income, employment, and childcare needs (Lebel et al., 2020).

The anxiety of pregnant women can cause changes in physical activity, rest, nutrition that will affect the mood of the mother's feelings and fetal development. Anxiety can also increase the risk of miscarriage, preterm birth, BBLR, and lower APGAR scores at birth (Corbett et al., 2020). Molecular biology, which is well known during pregnancy for women who experienced stress, concluded that stress can cause a decrease in placental blood flow. This can reduce the amount of liquor and impair fetal growth (Catsaros & Wendland, 2020), primarily if the anxiety occurs in mothers who previously had a high risk of pregnancy.

In general, respondents seemed to experience anxiety. When researchers visited, almost all respondents showed a conservative attitude. The observations also obtained that some respondents often squint, sitting in a rigid position. The respondent's expression seemed friendly, smiling often but still alert at the first meeting.

The Covid-19 virus is more susceptible to contracting high-risk groups such as pregnant women, the elderly, and children. The covid-19 pandemic impacts physical and psychological changes that affect a person's behavior (Dashraath et al., 2020). Typical behavioral changes in pandemic times are social isolation closely related to

psychological problems, so excessive anxiety arises (Berghella & Hughes, 2021). Covid-19 disease increases mortality, limited care, and economic and social systems disruption. This also affects a person's psychological condition (Capobianco et al., 2020).

The hypnotherapy intervention, which was done in 3 sessions for one week, helped respondents to increasingly recognize themselves and be able to accept the current situation. Respondents felt better at dealing with anxiety, were more comfortable, were able to control their emotions, and calmed down during pregnancy with high risk. Almost all respondents said that with hypnotherapy, respondents are more confident and trust the positive suggestions routinely said every day. In the last session, respondents looked more comfortable and open to researchers, chatted full of laughter, and felt more familiar than at the first visit. Facial expressions seemed more friendly and relieved.

The problems or stresses that affect pregnancy were handled in trance circumstances, and the purpose was to achieve deep relaxation. Circulation throughout the body improved after relaxation and was fulfilled with hypnosis. This phenomenon was very helpful in enhancing placental circulation, increasing amniotic fluid, and increasing fetal growth (Shah & Sejal H Thakkar, 2011). Self-hypnosis training helped respondents quickly manage themselves with what we might think as natural sedatives.

The use of hypnotherapy helped to reduce anxiety, including freedom from adverse side effects and drug interactions, a lack of addictive risk, and an increase of the patient's sense of mastery knowing that they have self-management skills, other studies on the use of hypnotherapy or self-hypnosis, in general, resulted in physiological improvements such as a more stable heart rate and have the potential to improve immune function due to reduced stress (Domínguez-Solís et al., 2021).

In addition, correct information and counseling towards high-risk pregnant women about coronavirus can minimize the anxiety that the patients experience. Health workers or midwives can visit pregnant women's homes or create WhatsApp groups as a tool to monitor pregnancy, so the patients can quickly know alternative solutions that can be done to reduce excessive anxiety that will be fatal for the mother and fetus.

After three hypnotherapy sessions, each sample showed the effect of this therapy that had been administered. This can be seen from the number of anxiety scores after the entire therapy session was given. At the end of the therapy session, two pregnant women experienced a decrease in category to mild anxiety, namely Mrs. N and Mrs. T. The other three pregnant women did not experience a reduction in the class but experienced decreased anxiety scores. Despite this, all pregnant women sampled by the study experienced a decrease in anxiety scores.

When viewed based on the line graph, which was decreasing in each sample, the lines of Mrs. H, Mrs. S, and Mrs. T have a reasonably constant line decrease on each measurement of high-risk anxiety scores.

CONCLUSION

Hypnotherapy reduces the anxiety of pregnant women at high risk in the Covid-19 pandemic. For subsequent researchers, to improve more objective anxiety assessments can use biomarker measurements such as cortisol levels. The results of this study are expected to be applied as a simple therapy in stress management, especially pregnant women.

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Original Research

Type Of Breast Pump And The Affect To Pain Scale, Milk Production, And Pumping Time In Breastfeeding Mothers

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ABSTRACT

Background: As we know that breastfeeding saves children under five lives every year, especially during the Covid-19 pandemic. The facts show that only 43% of infants 0-6 months are exclusively breastfed. The limited time for breast milk expression in between the mother's work routine needs to be supported by an efficient and effective pump. This study aimed to assess the type of breast pump not affect to pain scale, milk production, and pumping time in breastfeeding mothers.

Methods: This research is a cross-sectional study with a sample of 36 breastfeeding mothers in Banyumas Regency. They were chosen by distributing survey invitations through the WhatsApp group with a background breastfeeding mothers. Data was collected using the Google form, and analyzed using the Chi Square statistical test with a significance level of 95% (Alpha 0.05).

Results: Chi-Square analysis test shows the Asymp value. Sig. (2-sided) for the relationship between the type of Breast Pump and the Pain Scale, the volume of breast milk expressed, and the duration of pumping are 0.001; 0.905; 0.620, so only pain scale which less than $\alpha > 0,05$, the others are more than $\alpha > 0,05$. This result means any correlation between the type of breast pump with pain scale but no correlation with the amount of milk expressed, and the time spent pumping.

Conclusion: There is no relationship between the type of breast pump, the amount of milk expressed, and the time spent pumping, but any correlation between pain scale. So breastfeeding mothers can choose any breast pump that fits their needs and consider other factors influencing breastfeeding success.

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INTRODUCTION

Optimal breastfeeding is crucial because it can save more than 800,000 lives of children under five every year, especially during the Covid-19 pandemic. However, the

facts show that only 43% of infants 0-6 months are exclusively breastfed. This is common in the working mother community. The limited time for breast milk expression in between the mother's work routine needs to be supported by an efficient and effective pump.

The high interest of working mothers in Indonesia to continue to breastfeed their babies when returning to work is following the results of primary health research by the Health Research and Development Agency, namely the percentage of children aged 0–23 months who have been breastfed between working and non-working mothers, which is 90.8%. Mothers who do not work, 92.3% of mothers who work as employees, 93.2% of self-employed mothers, 93.7% of mothers who are farmers/fishers/labourers, and 90.9% of mothers with other occupations. This needs to be supported by adequate facilities and infrastructure (Kemenkes RI, 2018).

Spending enough time to express breast milk in between busy work is often a dilemma for some working mothers. Many workplaces provide support for their employees to express breast milk during working hours. However, this support is often provided without reducing the workload so that working mothers who breastfeed must be able to manage the time between the busy workloads to express breast milk optimally.

Lack of rest time, inadequate facilities for expressing breast milk, lack of breastfeeding promotion, and lack of support from superiors and coworkers are challenges for mothers who wish to continue breastfeeding in the workplace (Tsai, 2013). Mothers who work with limited time to express breast milk require a long duration of rapid expression to empty the breast, which does not affect milk production or secretion. Breast pump provision has been used as an incentive for breastfeeding, although effectiveness is unclear. Women's use of breast pumps is increasing and a high proportion of mothers express breastmilk (Gardner et al, 2019).

Several methods that can be used to express breast milk include manual by hand, manual pump and electric pump (Gardner et al., 2019). Some of these methods do not affect the pattern of breast milk production. The previous research describe the majority of mothers who express breast milk (65%, 666/843) use an electric pump, and this type of pump is preferred by 59% (454/769) of mothers who express breast milk. This study is different from other previous studies which have never studied the difference in the amount of breast milk from the use of the three types of breast pumps. The selection of the type of pump is adjusted to the needs of the mother and baby.

However, the highest amount of breast milk came from the use of an electric breast pump with a total milk volume of >120 mL. Therefore, it is necessary to know the effectiveness and efficiency of the pump type in terms of volume, duration and frequency. Any breast pump causes mild breastfeeding pain. There is no relationship between the type of breast pump, the amount of milk expressed, or the time spent pumping.

There is no relationship between the type of breast pump, the amount of milk expressed, or the time spent pumping but any correlation between pain scale. So breastfeeding mothers can choose any breast pump that fits their needs and comfort and consider other factors that influence breastfeeding success.

MATERIALS AND METHOD

Population and Sample

The population is all working breastfeeding mothers in the Banyumas district. Sampling in this study used a purposive sampling technique, which is a sampling technique with specific considerations. The sample criteria were taken based on the inclusion criteria of breastfeeding mothers on days 40-60, breastfeeding mothers who worked and breastfed exclusively. The sample used in this study were 36 respondents.

Research Model and Design

The research model used was cross-sectional, with a sample of 36 breastfeeding mothers. The sampling technique used was purposive sampling. Chi-Square statistical test is different from hypothesis testing, and the significance level is 95% (alpha 0.05).

Research Variable

The independent variable of this research is breast pump type, and the dependent variable of this study is pain while breastfeeding, the volume of breast milk once expressed and duration of pumping.

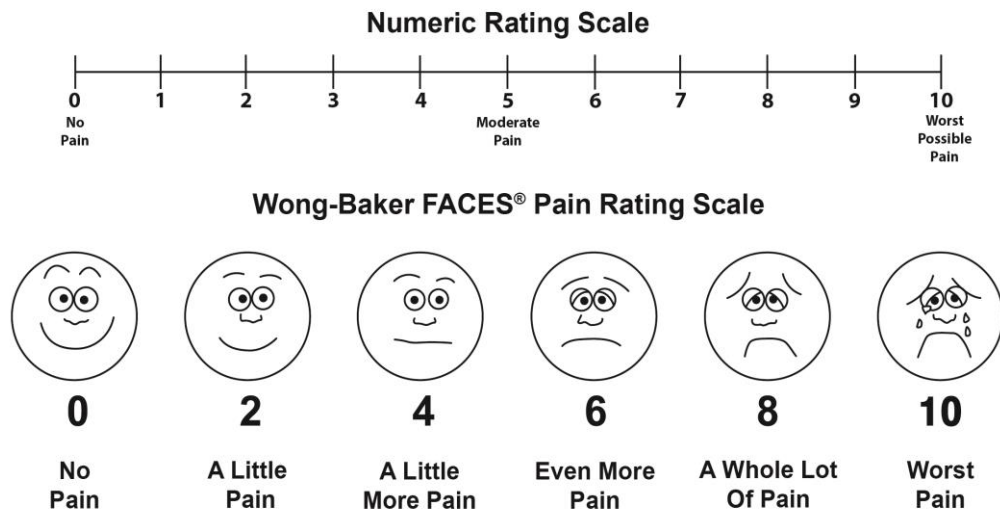
Instuments

Questionnaire using Likert 5 points to measure a response to 19 Questions adapted from the Numerical Assessment Scale (NRS) to determine the scale of pain and latch assessment tools to determine the success of breastfeeding. Validity test and Reliability is done on 30 breastfeeding mothers Outside the research sample. Validity test using The moment of pearson products and reliability tests using Alpha Cronbach with a significance level of 5%. Of the 20 questions, only 1 invalid question so that only 19 questions can be relied upon.

Table 1. The LATCH Breastfeeding Assessment Tool

Assesment	0	1	2	Total scores
L Latch on	Too sleepy or reluctant No sustained latch or suck achieved	Repeated attempts for sustained latch or suck Hold nipple in mouth Stimulate to suck	Grasps breast Tongue down Lips flanged Rhythmical sucking	
A Audible swallowing	None	A few with stimulation	Spontaneous and intermittent/frequent	
T Type of nipple	Inverted	Flat	Averted	
C Comfort	Engorged Cracked, bleed, large blisters ora	Filling Reddene/small blisters or bruises	Soft Not tender	

Assesment	0	1	2	Total scores
	bruises Severe discomfort			
H Hold positioning	Full assist	Minimal assist	No assist	



Picture 1. Numeric Rating Scale (NRS)

Data Collection Technique

We distributed survey invitations via WhatsApp to WhatsApp groups with the background of the breastfeeding mothers, and waited until the response received reached the targeted number of respondents.

Data Analysis

This study's univariate analysis uses a frequency distribution to examine respondent characteristics. The data will be processed with SPSS 16.0. The chi-square statistical test was evaluated using bivariate analysis and a 95% significance level (alpha 0.05).

Ethical considerations

This study was approved and under the supervision of the Faculty of Health of Harapan Bangsa University. The permit to conduct this research was proposed by the Research and Community Service Institute of Harapan Bangsa University. The researchers apply research The principles of anonymity, good and non-mealeficence, autonomy, and justice. Explanation of background and research objectives, as well as information approval contained in the Google form, together -name with instruments.

Participants are reminded of the beginning of the survey that process and complete The survey shows voluntary agreement to participate learning. Anonymity and confidentiality maintained throughout the study.

RESULTS

The study was conducted using a questionnaire via Google Form to breastfeeding mothers, with 36 participants. Collecting data from the questionnaire obtained the following percentage results:

Table 2. Characteristics of Respondents

Category	Total	Percentage
Age		
21-25 years	4	15%
26-30 years	11	28%
31-35 years	15	38%
36-40 years	6	18%
Education		
Senior High School	2	5%
College	34	95%
Work		
Housewife	5	14%
Employee	30	83%
Self-employed	1	3%
Monthly Income		
Rp.100.000-500.000	1	3%
Rp.600.000-1.000.000	2	5%
Rp.1.000.000-3.000.0000	15	42%
>Rp.3.000.000	18	50%
Number of Children		
1-2 children	35	97%
3-4 children	1	3%
Baby Birth Weight		
< 2500 gr	1	3%
2500-3500 gr	29	80%
> 3500 gr	6	17%

Based on Table 2, it is known that all respondents are 36 respondents consisting of respondents with an age range of 21-40 years, where the largest age group is respondents aged 31-35 years (38%), with the most educational background being Higher Education (95%) and dominated by working mothers as employees (83%) of the total respondents. It is known that the highest monthly income of mothers is Rp. >3,000,000 with a prevalence (50%).

Table 2 also shows that from 36 respondents, 35 respondents (97%) have 1-2 children. Based on the baby's birth weight, the respondents were dominated by babies with a normal weight of 2500-3500 grams (80%).

Table 3. Types of Breast Pump

Category	Number	Breastpump with Natural Nurshing Technology	Breastpump with Personal Fit (breast protectors)	Plastic funnels with pads
Electric	23 (64%)	20	17	14
Handsfree	2 (6%)	2	2	2
Manual	11 (30%)	6	9	10

Table 3 shows that the majority of breastfeeding mothers use electric breast pumps as many as 23 people (64%). Of the 23 types of electric breast pumps, 20 of them have been equipped with Natural breastfeeding technology and are the type most in demand by respondents, and 18 electric breast pumps have Personal Fit or breast protectors, and 15 of them have used plastic funnels with pads. On the other hand, a hand-free pumping type breast milk pump has been equipped with these three technologies. As for manual breast pumps, most of them are equipped with a plastic funnel with breast pads and personal fit.

Table 4. Amount of Breast Milk Once Expressed

Category	Number	Result < 60 ml	Result 60-120 ml	Result > 120 ml
Electric	23 (64%)	1	9	13
Handsfree	2 (6%)	0	1	1
Manual	11 (30%)	1	5	5

Based on Table 4, it is known that the highest amount of once-expressed mother's milk comes from the use of an electric breast pump with a total milk volume of >120 mL as many as 13 respondents. However, the results of pumping breast milk with a volume of <60 mL appeared in the electric and manual groups with a low prevalence of only one respondent each.

Table 5. Breast Pump Pain Scale

Category	Number	Pain Scale Mild (scale 1-3)	Pain Scale Mild (scale 4-6)	Pain Scale Mild (scale 7-10)
Electric	23 (64%)	14	7	2
Handsfree	2 (6%)	1	1	0
Manual	11 (30%)	7	4	0

Based on Table 5, the pain scale of breastfeeding mothers who use a breast pump when expressing breast milk can be seen. In general, the use of breast pumps causes pain, but the most significant percentage appears on the mild pain scale where all types of breast pumps have values above > 50%. Severe pain only appeared when using an electric breast pump as many as two respondents (9%).

Table 6. Activities when Expressing Breast Milk with a Breastpump

Category	Number	Sitting back	Without leaning
Electric	23 (64%)	18	5
Handsfree	2 (6%)	2	0
Manual	11 (30%)	7	5

Table 6 illustrates the activity when expressing breast milk with a breast pump inbreastfeeding mothers. The activity when expressing breast milk while sitting back was the highest in the three types of breast pumps than the activity of expressing breast milk without leaning.

Table 7. Frequency and Duration of Pumping Using Various Breastpump

Category	Number	pumping frequency per day		pumping duration (minutes)		
		<10x	10-14x	<15	15-30	>30
Electric	23 (64%)	23	0	2	14	7
Handsfree	2 (6%)	2	0	0	1	1
Manual	11 (30%)	11	0	1	9	1

Based on Table 7, it can be seen that the frequency and duration of pumping use various breast pumps. The results occurred with the use of any breast pump, with a pumping frequency of <10x per day as many as 36 people, but the longest pumping duration of 15-30 minutes was mostly in the electric pump group as many as 14 person.

Table 8. Cross Tabulation Between Type of Breast Pump with Pain Scale, Milk Production and Pumping Duration

Category	Pain scale			volume of breast milk			duration of pumping		
	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.593 ^a	4	.001	1.034 ^a	4	.905	2.641 ^a	4	.620
N of Valid Cases	36			36			36		

Statistical analysis with SPSS version 16.0 using Chi-Square Test shows the Asymp value. Sig. (2-sided) for the relationship between the type of Breast Pump and the Pain Scale, the volume of breast milk once expressed, and the duration of pumping, respectively, are 0.001; 0.905; 0.620. This value > 0.05 means no relationship between the type of breast pump with the volume of breast milk once expressed, and duration of pumping but any correlation between pain scale.

DISCUSSION

Care during the postpartum period needs attention because about 60% of maternal mortality occurs. The postpartum period is a period of the mother's activity to breastfeed. Breastfeeding is the process of providing food to babies using breast milk (ASI) directly from the mother's breast (Kemenkes RI, 2018). Several methods that can be used to express breast milk include manual by hand, manual pump and electric pump. Some of these methods do not affect the pattern of breast milk production (Gardner *et al.*, 2019).

The pattern of breast milk production remains consistent in breastfeeding mothers, either breastfeeding directly or by expressing. This research was carried out with the aim of knowing the use of the type of breast pump with a pain scale and the success of breastfeeding for workingbreastfeeding mothers during the COVID-19 pandemic in Banyumas Regency in 2021.

Data on the characteristics of respondents based on Table 2 illustrates that several factors influence the behaviour of respondents in pumping breast milk for their babies, including the first, namely the age factor that affects the perception and mindset of the respondents. The knowledge obtained is getting better from the experience received by the respondent. The second is the education level of the respondent. The higher the level of education, the better knowledge of receiving information (Budiman, 2013).

This affects the mother's behaviour in pumping breast milk. This is reinforced by the status of employees who have jobs with fixed salaries where most have incomes above 3 million per month so that it allows mothers to have the opportunity to buy tertiary necessities such as rice pumps. Breast pumps are seen as financially valuable, acceptable and have the potential to overcome barriers to breastfeeding mothers with several potentials (McInnes *et al.*, 2019).

The results of the questionnaire output based on Table 2 also show quite good results because babies with normal birth weight are dominated by 2500-3500 grams (80%). This is related to the risk when babies are born with low birth weight (LBW) or babies born <2500g, where LBW babies tend to have a slower sucking reflex than children born with normal weight. In the case of LBW, it is infrequent to be exclusively breastfed because of the mother's desire to increase the baby's weight quickly, so they are given additional food other than breast milk (Kumala and Purnomo, 2019).

In Table 3, monitoring of breastfeeding mothers, it is known that 19 respondents (68%) chose an electric breast pump. This is because the use of an electric pump does not require a lot of energy so thatbreastfeeding mothers are more relaxed and comfortable. This result explained the use of an electric breast pump by working mothers could increase milk production. This is in accordance with previous research, namely the volume of breast milk expressed using an electric pump will be more.

The use of a comfortable vacuum on an electric breast pump can increase the flow rate and volume of breast milk. Although electric breast pumps are increasing, evidence of their effectiveness still needs to be scientifically proven (Dewi and Windarti, no date). Research in the Tlogomas Region of Malang City stated that there was an effect of using the Breastfeeding Pump Method (MPA) on exclusive breastfeeding for working mothers. This method also does not interfere with the work process, has flexibility in working time (Anggreni *et al.*, 2018).

The thing that is a concern for women working in breastfeeding is how to maintain milk production during working hours. Previous research stated that there was no significant difference between the effectiveness and satisfaction of breast milk

production using an electric breast pump. The use of a breast pump does not affect the amount of breast milk production. However, an electric breast pump provides effectiveness and satisfaction during breastfeeding (Maula and Widyawati, 2017).

In Table 3, monitoring the type of breast pump, it is known that 23 respondents are users of electric breast pumps. The use of an electric breast pump can support the success of exclusive breastfeeding. Its easy use makes it possible for mothers to express breast milk even when they return to work. In general, there are two types of breast pumps, namely manual breast pumps and electric pumps. The use of an electric pump is recommended for mothers who work more than 8 hours and have problems with pumping time (Khayati, 2019).

Breastpump with Natural nursing technology is the type that is most in demand by 20 respondents because, unlike other products, the breast pump natural nursing technology uses a gentle breastfeeding pumping pattern with productive pumping results to produce more breast milk in a shorter time, is comfortable, and safe for use by breastfeeding mothers. A total of 17 respondents using the breast pump type have Personal Fit, and 14 of them already have a mouthpiece equipped with breast pads.

A personal fit breast pump has an average flange between 24 and 27 millimetres (mm) adjusted to the areola. The downside of this product is that not all nursing mothers will fit this protective size (Becker, Smith and Cooney, 2016). On the other hand, the hands-free pumping type of breast pump has been equipped with these three types. While for the manual breast pump, most of the plastic funnels are equipped with breast pads and personal fit.

Based on Table 4, the highest amount of once-expressed mother's milk came from the use of an electric breast pump with a total milk volume of >120 mL. However, the results of pumping breast milk with a volume of <60 mL appeared in the electric and manual groups with a low prevalence of only one respondent each. While referring to the management of expressed breast milk, the dose of bottled breast milk should be between 60-20ml (according to the habit of many babies drinking, this is so that the bottles used are used up in one drink and there is no residue).

Several studies that support this research include a study conducted in Africa regarding the ratio of the volume of breast milk expressed using three methods of milking, namely with an electric pump, a manual pump and a manual pump with each hand being 578 (135–350), 1051, 463 (85–1315), and 323 (93–812) with the highest volume in electric pumps. Users of hands-free pumping and manual breast pump did not differ significantly between the three types of breast pumps. This is in accordance with previous studies regarding the comparison of the volume of breast milk with three methods, namely, double electric pump 647 mL (SD=310); manual pump 520 mL (SD=298); and manual by hand 434 mL (SD=291) (Slusher *et al.*, 2007).

Based on Table 5, it can be seen that, in general, the use of breast pumps causes pain, but the most significant percentage appears on a mild pain scale where all types of breast pumps have values above >50%. Severe pain only appeared when using an electric breast pump as many as two respondents (9%). These results are supported by other studies, that in general, mothers are delighted with using manual breast pumps, but there is no difference in the convenience of each breast pump. Experiments conducted in parallel groups with 145 respondents who tested maternal satisfaction reported that mothers were very satisfied using manual breast pumps compared to electric breast pumps. Breast pumps can cause nipple damage if the breast pump is not properly attached to the breast, it can cause painful (Amir et al, 2021).

The results of the Chi-Square test analysis show that the Asymp value. Sig. (2-sided) for the relationship between the type of Breast Pump and the Pain Scale, the volume of breast milk once expressed, and the duration of pumping, respectively, are 0.001; 0.905; 0.620. This value > 0.05 means no relationship between the type of breast pump with the volume of breast milk once expressed, and duration of pumping but any correlation between pain scale. Other factors influence it, such as lactation management, breastfeeding position, food, stress, let down reflex, social culture and health behaviour (Vony Nurul Khasanah, 2019).

Not only the right method when used breast pump but also right breastfeeding position, can help the mother relax, reducing pain and increasing the volume of breast milk. Table 6 shows conformity with the theory of the correct breastfeeding position, namely by sitting upright on the backrest, arm resting on the armrest, and sitting with the feet on the ground. This will reduce the build-up of lactic acid that causes pain and fatigue while breastfeeding.

The use of a comfortable breastfeeding chair will help the correct attachment of breastfeeding will stimulate the smooth flow of breast milk, thereby eliminating the feeling of cramps that arise when breastfeeding because the hormone in the let-down reflex is oxytocin (Gumasing, Villapando and Siggaoat, 2019). Meanwhile, Table 7 shows that although the volume of single-expressed breast milk is the most, it appears in the use of an electric breast pump. However, the percentage has evenly distributed results on all types of breast pumps with a pumping frequency of $<10x$ per day, and the most extended pumping duration is 15-30 minutes.

This data is in accordance with the Indonesian Pediatrician Association (IDAI) recommendations, explaining that the schedule for breastfeeding newborns should be around 8-12 times a day (Ambarwati, Susanti and Risdayanti, 2021). Meanwhile, for the period in one feeding, babies usually need approximately 10-15 minutes. The frequency and duration (extended) of breastfeeding, which is replaced by a regular pumping frequency, can stimulate the let-down reflex that triggers the production and release of breast milk (Rini and Dewi, 2017).

However, the level of stress inbreastfeeding mothers in this study was not studied in depth. The current Covid 19 pandemic is likely to affect the psychology ofbreastfeeding mothers. Therefore, further studies are needed on research related tobreastfeeding mothers during the Covid 19 pandemic.

CONCLUSION

This study, for the first time, describes the relationship between the type of breast pump and the scale of pain, volume of breast milk, and duration of pumping in working breastfeeding mothers. Based on the results of this study, it can be concluded that the type of electric breast pump with natural nursing technology is the type that is most in demand by the respondents because, besides being comfortable, this type is able to produce the largest amount of breast milk.

However, in general, the use of any breast pump causes breastfeeding pain with a mild pain scale. There is no relationship between the type of breast pump with the volume of breast milk once expressed and the duration of pumping but any correlation between pain scale. So that breastfeeding mothers can choose all types of breast pumps according to their abilities and comfort but need to pay attention to other factors that affect the success of the breastfeeding process.

The use of an electric pump is recommended especially Breastpump with Natural nursing technology because, unlike other products, the breast pump natural nursing technology uses a gentle breastfeeding pumping pattern with productive pumping results to produce more breast milk in a shorter time, is comfortable, and safe.

It is hoped that further researchers will conduct research with the same variables by adding research samples and studies on stress levels in breastfeeding mothers during the Covid-19 pandemic so that the research results complete this research. Experimental research related to the effectiveness of breastpump on pain scale, volume of breast milk and length of pumping time will be very helpful to strengthen scientific evidence regarding the benefits of breastpump for increasing exclusive breastfeeding coverage for working breastfeeding mothers.

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Original Research

Factors That Affect Back Pain In Second And Third Trimester Pregnant Women

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ABSTRACT

Background: Back pain in pregnant women in the 2nd and 3rd trimesters, if not treated immediately, will greatly disturb the comfort of pregnant women and can cause complications such as moderate to severe anxiety due to pregnant women not being able to adapt to their back pain. Several factors are associated with the occurrence of back pain in pregnant women. This study aims to prove the factors that affect back pain in second and third trimester pregnant women.

Methods: This research was a cross sectional design. The sample was 30 pregnant women in the 2nd and 3rd trimesters experiencing back pain determined by using the total population sampling technique with the following inclusion and exclusion criteria. Back pain felt by pregnant women was stated in filling out a questionnaire with a pain instrument, namely the Numeric Rating Scale. The data were analyzed by statistical Odds Ratio Test.

Results: The result of data analysis between pregnancy back pain with several factors are as follows: the OR value of mother age factor was 0.464. The OR value of gestational age factor was 0.571. The occupation's OR value was 0.762. The parity's OR value was 0.242. The religion's OR value was 0.464. The OR value of gender was 1.000. The OR value of history of lifting heavy objects was 1.833. The OR value of history of excessive bending was 13.000. The yoga exercise's OR value was 0.143.

Conclusion: History of excessive bending has the greatest risk of back pain in pregnant women.

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INTRODUCTION

Every pregnant woman will usually experience physiological discomfort as a result of the physical changes of pregnancy, one of which is back pain (Fitriani, 2018). Back pain in pregnancy is back pain that occurs in the lumbosacral area. Back pain will usually increase in intensity with increasing gestational age because this pain is a result of a shift in the center of gravity and body posture. Improper posture will force additional stretching and fatigue on the body, especially in the spine so that it will cause pain or pain in the back of pregnant women (Octavia & Ruliati, 2019).

If this back pain is not handled properly can cause poor quality of life of pregnant women. This problem will continue in the form of recurring or recurring injuries continuously in worse condition according to with the course of her pregnancy (Octavia & Ruliati, 2019). Stated that back pain in pregnant women in the 2nd and 3rd trimesters, if not treated immediately, will greatly disturb the comfort of pregnant women (Aryani et al., 2018).

Back pain, although actually physiological, can be a pathological complaint that can cause complications such as moderate to severe anxiety due to pregnant women not being able to adapt to their back pain. Anxiety experienced by pregnant women will be able to bring up physical symptoms such as fatigue, lethargic, irritable, restless, dizzy, nauseous and lazy. Changes that occur in the physical affect the psychological and physical aspects on the contrary, so that it is easy for mothers pregnant to experience trauma. Even the feelings or trauma felt by pregnant women can be felt by the fetus, namely by showing a reaction to stimulation that comes from outside the mother's body and causes a traumatic delivery (Aryani et al., 2018).

There are many factors which can relate to back pain in pregnancy, such as gestational age, mother age, occupation, parity, history of lifting heavy objects more than 10 kg and excessive bending (bend down making back tense) of the pregnant women including those who have applied Yoga as a physical exercise (Mu'alimah, 2021) (Cahyani et al., 2020) (Noviyanti et al., 2021)(Osinuga et al., 2021)(Wasilewska et al., 2021) (Caputo et al., 2021) (Manyozo et al., 2019).

Based on the results of research conducted by Noviyanti et al showed that respondents with the age category 35 years were 48 respondents (56.6%). From the result of the data analysis, it was found that there was a relationship between individual factor (age) with complaints of low back pain (p value = 0.000). At age, normally, severe pain conditions in young pregnant mother can be felt as a mild complaint than in older pregnant mother. Older pregnant mother experience neurophysiological changes and may experience decreased perception of sensory stimuli and increased pain threshold (Noviyanti et al., 2021).

Meanwhile, gender characteristics and their relationship to the nature of exposure and the level of susceptibility to pain play a separate role. Certain diseases are closely related to gender, with certain characteristics. Added, in some religions, individuals consider pain and suffering as a way to cleanse sin. This understanding helps individuals deal with pain and makes it a source of strength (Wasilewska et al., 2021).

According to Osinuga et al., factors related to the incidence of back pain are demographic characteristics, personal health habits, type of work, psychological conditions including the values of beliefs held such as religious values and history of illness. For the type of work that requires a lot of energy (heavy work), non-neutral work postures (bent and twisting, repetitive movements, and long working hours) will greatly affect the occurrence of back pain amongst occupational populations, including back pain in pregnant women.

Biological intercourse and gender also are hazard elements; women have a higher occurrence of low back pain within side the trendy populace than men. A worldwide burden of sickness look at discovered that the age-standardized occurrence of low back pain is likewise higher amongst woman than men. Pregnant women, of course, belong to the group of women who will have a higher incidence of back pain than men (Osinuga et al., 2021).

In Osinuga's research result, it was presented that subgrouping studies based on definitions of exposure (hours/week of domestic labor, frequency, or intensity of domestic task per week, and presence of biomechanical factors such as lifting, carrying and awkward postures), resulted in variation of the pooled odds ratio across groups (1.29–2.30). The test for between-group heterogeneity was statistically significant ($Q = 7.48$, p value = 0.02).

Within-group heterogeneity was reduced for studies that defined exposure as a function of time (OR = 1.59; 95% CI 1.16–2.18; $I^2 = 0\%$; $N = 3$ studies) or by biomechanical exposure (OR = 2.30; 95% CI 1.75–3.04; $I^2 = 0\%$; $N = 4$ studies), compared to studies that defined exposure based on work intensity or frequency (OR = 1.29; 95% CI 0.94–1.79; $I^2 = 82\%$; $N = 4$ studies) (Osinuga et al., 2021).

The other Osinuga's research result was that when studies were sub-grouped by gender specificity, studies with samples of only women had a stronger association between the physical demands of domestic labor (PDDL) and back pain (OR = 1.72; 95% CI 1.41–2.11; $I^2 = 30\%$; $N = 8$ studies) than studies with samples of both men and women (OR = 1.44; 95% CI 0.92–2.23; $I^2 = 72\%$; $N = 3$ studies) (Osinuga et al., 2021).

One of the factors that influence back pain in pregnant women is yoga exercise as a physical activity. According to Situmorang et al, in their research results, prenatal yoga was very effective in reducing physical complaints such as back pain in third trimester pregnant women (Situmorang et al., 2020). In addition, based on the results of research by Wulandari et al that on 18 pregnant women who were taken by purposive sampling, after doing yoga exercises, showed p value = 0.000 which means that there was an effect of prenatal yoga on back pain in pregnant women third trimester (Wulandari et al., 2020).

Preliminary studies conducted at Kasreman Public Health Center on September 2020 by distributing questionnaires to 5 pregnant women in the second and third trimesters, it was found that 2 pregnant women said that they had complaints of lower back pain in the very painful category, 1 pregnant woman with a little pain category and 2 pregnant women did not feel back pain. Based on the preliminary study result, it was important to know about the factors associated with back pain during pregnancy so that pregnant women can prevent severe back pain.

The aim of this research was to prove the factors that affect back pain in second and third trimester pregnant women.

MATERIALS AND METHOD

This research was conducted on September 2020 at Kasreman Public Health Center. This type of research was quantitative research with correlation method. The research population was 30 pregnant women in the 2nd and 3rd trimesters at Kasreman Public Health Center.

The sample was 30 pregnant women in the 2nd and 3rd trimesters experiencing back pain which was determined by using the total population sampling technique with the following inclusion criteria: pregnant women in the 2nd and 3rd trimesters, experiencing back pain during pregnancy, willing to be a research respondent and doing yoga exercise during pregnancy because yoga is an example of a physical activity factor which will be one of the factors to be studied. And also with the exclusion criteria: pregnant women who experienced complications during pregnancy, especially during the 2nd and 3rd trimesters.

Sampling in this study used the total population, that is, all populations were used as research samples because all of the population met the study inclusion criteria. All of sample was pregnant women in the 2nd and 3rd trimesters experiencing back pain and applying yoga exercise by following the yoga exercise guidelines from videos at each other's homes accompanied by online yoga instructors to monitor whether the movements that are being done are correct or not. All of the pregnant women have been advised to do yoga exercise three times for a week, 30-60 minutes each. Throughout the study, anonymity and confidentiality were maintained.

Back pain felt by pregnant women was stated in filling out a questionnaire with a pain instrument, namely the Numeric Rating Scale (NRS) with pain ranging from 0 to 10 (Lazaridau et al., 2018). In general, this is usually concludes as follows a score of 0 means “no pain”, 1-3 means “mild pain”, 4-6 means “moderate pain” and 7-10 means “severe pain”. While data on gestational age, maternal age, parity, occupation, religion, gender, history of lifting heavy objects and history of excessive bending were collected using open-ended questions.

After collecting data, these were analyzed using *Odds ratio test* to find out how many risk factors such as maternal age, gestational age, parity, occupation, religion, gender, history of lifting heavy objects, history of excessive bending and physical exercise specifically yoga exercise for the incidence of back pain in pregnant women.

RESULTS

According to table 1, the average mother age of the respondents was 27.3 (SD=4.88) with the OR value was 0.464. The average gestational age of the respondents was 27.8 (SD=7.66) with the OR value was 0.571. The average parity of the respondents was 1.43 (SD=0.50) with the OR value was 0.242. The average occupation of the respondents was 1.96 (SD=1.18) with the OR value was 0.762. The average religion of the respondents was 1.10 (SD=0.30) with the OR value was 0.464. The average gender of the respondents was 1 (SD=0.00) with the OR value was 1.000.

The average history of lifting heavy objects (more than 10 Kg) of the respondents was 1.33 (SD=0.47) with the OR value was 1.833. The average history of excessive bending (bend down making back tense) of the respondents was 1.4 (SD=0.49) with the OR value was 13.000. And the last one, the average yoga exercise of the respondents was 1.8 (SD=0.41) with the OR value was 0.143.

Tabel 1. Profile of respondents

Profile	M	SD	f	%	OR
Mother Age	27.3	4.88			0.464
20-35 year			27	90.0	
> 35 year			3	10.0	
Gestational Age	27.8	7.66			0.571
2 nd Trimester (14-27 week)			11	36.7	
3 rd Trimester (28-40 week)			19	63.3	
Parity	1.43	0.50			0.242
Primigravida			17	56.7	
Multigravida			13	43.3	
Occupation	1.96	1.18			0.762
Un work (housewife)			16	53.3	
Work (entrepreneur, private)			14	46.7	

Profile	M	SD	f	%	OR
civil Servant)					
Religion	1.10	0.30			0.464
Majority (Islam)			27	90	
Minority (Kristen)			3	30	
Gender	1	0.00			1.000
Female			30	100	
Male			0	-	
History of lifting heavy objects (>10 kg)	1.33	0.47			1.833
Ever			10	33.3	
Never			20	66.7	
History of excessive bending (bend down making back tense)	1.4	0.49			13.000
Ever			12	40	
Never			18	60	
Yoga exercise	1.8	0.41			0.143
Regularly (≥ 3 x/week)			24	80	
Irregularly (< 3 x/week)			6	20	

DISCUSSION

This study measured the back pain felt by pregnant women associated with risk factors that may cause back pain in pregnancy. Those several risk factors were mother age, gender, religion and experience, which in this case is associated with parity of pregnant women in addition to other variables, gestational age, occupation, history of lifting heavy objects more than 10 kg and excessive bending (bend down making back tense) of the pregnant women including those who have applied yoga as a physical exercise (Mu'alimah, 2021) (Cahyani et al., 2020) (Noviyanti et al., 2021)(Osinuga et al., 2021)(Wasilewska et al., 2021) (Caputo et al., 2021) (Manyozo et al., 2019).

Back pain is one of the most common complaints by pregnant women. This happens because healthy pregnant women will experience weight gain. The spine which is in charge of supporting the body will be burdened by this weight gain. This causes pain in the pelvis and back, especially the lower back. Usually to carry out daily activities, such as walking, wearing clothes, lifting things, pregnant women will experience difficulties due to the back pain that they suffer.

Entering the 2nd trimester, pregnant women will experience these symptoms significantly (Anggasari & Mardiyanti, 2021). Stated that back pain is one of the discomfort during the third trimester of pregnancy. Painful this lower back usually will increase the intensity often with increasing gestational age because of this pain is the result of a shift in the center of gravity woman and her posture. Change caused by the weight of the enlarged uterus, excessive bending, walking without rest and lift weights (Mu'alimah, 2021).

According to (Manyozo et al., 2019), low back pain (LBP) is a common musculoskeletal problem during pregnancy. The exact cause of LBP in pregnancy is poorly understood, often considered multifactorial in nature, and associated with biomechanical, vascular and hormonal changes during pregnancy. One third of the

population suffering from LBP report severe pain which is often associated with limitations on a woman's ability to work effectively, leading to poor quality of life.

Consequently, the woman's individual productivity in their daily routine activities is reduced. Many of the women with LBP experience their first episode of LBP during pregnancy. Despite the disabling effects of LBP in pregnancy, LBP is often untreated and considered normal and inevitable part of pregnancy among women (Manyozo et al., 2019).

In Rahmadona and Batubara's research it was explained that the symptoms of back pain were caused by an increase in the hormones estrogen and progesterone affects joints, bones and muscles hips so that the pelvis rotates forward and change posture to hyperlordosis. This hyperlordosis postures increased the strain on the pelvis and lower lumbar causing pain lower back. Rahmadona and Batubara also added that back pain could be very disturbing daily activities of pregnant women and if not handled could cause the quality of life of pregnant women to be bad. This problem would continue in the form of injuries recurrence or appear continuously with the condition worse according to the course of age pregnancy (Rahmadona & Batubara, 2019).

The data show the incidence of low back pain in pregnant women was found to reach 57.3% (Y. Astuti & Afsah, 2019). In addition, (Astuti & Afsah, 2019) said that as many as 68% of pregnant women experienced low back pain. Low back pain was pain that could interfere with the activities of pregnant women, insomnia, and work leave for working mothers (Y. Astuti & Afsah, 2019). There was even some evidence of socioeconomic losses, especially as a result of absenteeism from work by pregnant women with back pain (Purnamayanti & Utarini, 2020). Therefore, if low back pain in pregnancy is not treated properly, it will have an adverse effect on the well-being of the mother and her baby.

Maternal age is one of the factors associated with back pain. Based on the result of this study, the average mother age of the respondents was 27.3 (SD=4.88) with the OR value was 0.464. The OR value of mother age factor was 0.464, which means that the age of the mother may cause a 0.464 times risk for back pain in pregnant women. As evidenced in the research results of Noviyanti et al that there was a relationship between individual factors (age) with complaints of low back pain. This happens because in general the elderly consider pain as a natural component of the aging process and can be ignored or not handled by health workers (Noviyanti et al., 2021).

On the other hand, it is normal for severe pain conditions in young adults to be felt as mild complaints than in older adults. Older adults, including pregnant women, experience neurophysiological changes and may experience decreased perception of sensory stimuli and increased pain threshold. In addition, chronic disease processes that are more common in older adults such as disorders, cardiovascular disease or diabetes mellitus can interfere with normal nerve impulse transmission (Noviyanti et al., 2021) (Manyozo et al., 2019).

The way older people react to pain can be different from how younger people react. Because elderly individuals have slower metabolisms and a greater ratio of body fat to muscle mass than younger individuals, small doses of analgesics may be sufficient for pain relief in the elderly. Pain perception in the elderly may be reduced as a result of pathological changes associated with some disease, but in healthy elderly individuals the perception of pain may not change (Manyozo et al., 2019). So it can be concluded that the older a person is, the lower the pain threshold. On the other hand, the younger a

person is, the higher the pain threshold. Pregnant women with old age may feel less back pain than younger pregnant women (Noviyanti et al., 2021)(Manyozo et al., 2019).

Gestational age is also one of the factors associated with back pain. Based on the result of this study, the average gestational age of the respondents was 27.8 (SD=7.66) with the OR value was 0.571. The OR value of gestational age factor was 0.571 which means that the gestational age may cause a 0.571 times risk for back pain in pregnant women. In addition, parity, occupation and religion are also the risk factors associated with the incidence of back pain in pregnant women.

Based on the result of this study, the average parity of the respondents was 1.43 (SD=0.50) with the OR value was 0.242. The parity's OR value was 0.242, it means that the parity may cause a 0.242 times risk for back pain in pregnant women. The average occupation of the respondents was 1.96 (SD=1.18) with the OR value was 0.762. The occupation's OR value was 0.762, that means that the occupation may cause a 0.762 times risk for back pain in pregnant women. The average religion of the respondents was 1.10 (SD=0.30) with the OR value was 0.464. The religion's OR value was 0.464, it means that the religion may cause a 0.464 times risk for back pain in pregnant women.

Gestational age, parity, occupation and religion are related to self-coping. Coping affects a person's ability to treat painful. A person who controls pain with an internal locus feels that the self they themselves have the ability to cope with pain. Someone who controls pain with an external locus is more likely to feel that other factors in his life such as health workers are people who responsible for the pain they feel.

Therefore, coping patient is very important to be noted. Gestational age, parity, occupation and religion will affect the formation of pregnant women's self-coping to the back pain they feel (Potter & Perry, 2012) (Manyozo et al., 2019) (Osinuga et al., 2021) (Wasilewska et al., 2021) (Caputo et al., 2021).

In addition, gestational age, parity, occupation and religion are related to meaning of pain. A person's meaning associated with pain affects the experience pain and how a person adapts to pain. This is also related close to the individual's cultural background. Individuals will perceive pain in different ways, if the pain gives the impression of a threat, a loss, punishment, and challenge. Degree and quality the pain perceived by the patient is related to the meaning of pain (Potter & Perry, 2012) (Manyozo et al., 2019) (Osinuga et al., 2021) (Wasilewska et al., 2021) (Caputo et al., 2021).

According to result research from (Manyozo et al., 2019) low back pain (LBP) prevalence was increasing with increasing gestational age in trimesters, increasing gravidity, and decreasing maternal age. Women who were in their second (adjusted OR 1.83, p=.12) and third trimesters (adjusted OR 2.35, p=.03) were more likely to report LBP compared to those in first trimester.

However, only gestational age in trimesters was significantly associated with LBP and maternal age also gravidity were not significantly associated with the occurrence of low back pain in the study population when tested at 5% significant level. This observation explains LBP as an effect of alterations in the musculoskeletal system including postural changes, increasing load on the spine due to the growing fetus and the exaggerated lordosis that exert physical force over the spinal joints and causing dysfunction (Manyozo et al., 2019).

Gender was one of the factors that affect a person's pain intensity. Based on the result of this study, the average gender of the respondents was 1 (SD=0.00) with the OR

value was 1.000. The OR value of gender was 1.000, it means that the gender may cause a 1.000 times risk for back pain in pregnant women. This observation explains that gender characteristics and their relationship to the nature of exposure and the level of vulnerability play a separate role.

Certain diseases are closely related to sex, with certain characteristics. Diseases that are only found in certain sexes, especially those that are closely related to the reproductive organs or that genetically play a role in sex differences. In some cultures it is said that a boy should be brave and not cry, while a girl should cry in the same situation.

Pain tolerance is influenced by biochemical factors and is unique to each individual regardless of gender (Osinuga et al., 2021). Although the study found no difference between men and women in expressing pain, treatment was found to be less in women. Women prefer to communicate their pain, whereas men receive opioid analgesics more frequently as a treatment for pain (Osinuga et al., 2021).

The gendered difference in back pain has been attributed to several occupational factors, such as differential exposures to work-related physical and physiological factors, male-oriented tool and workstation designs, and gendered variation in the perception of pain. Generally, women tend to be clustered in specific occupations with different pattern of employment and exposures from those of men. However, several occupational studies and reviews have shown that women-dominated jobs may be just as physically taxing as male-dominated jobs.

Thus, women's unique occupational exposures may place them at risk for back pain. Additionally, millions of women experience strenuous daily work conditions in domestic labor, often in addition to a formal job. Women's domestic labor, which involves tasks such as cleaning, cooking, water fetching, manual washing of clothes, and family care duties, may be as physically, emotionally and time demanding as structured paid work (Osinuga et al., 2021).

Other risk factors associated with the incidence of back pain in pregnant women is history of lifting heavy objects more than 10 kg and history of excessive bending which bend down making back tense. Based on this result's study, the average history of lifting heavy objects of the respondents was 1.33 (SD=0.47) with the OR value was 1.833. The OR value of history of lifting heavy objects more than 10 kg was 1.833, it means that the history of lifting heavy objects more than 10 kg may cause a 1.833 times risk for back pain in pregnant women.

Whereas, the average history of excessive bending of the respondents was 1.4 (SD=0.49) with the OR value was 13.000. The OR value of history of excessive bending (bend down making back tense) was 13.000, it means that the history of excessive bending (bend down making back tense) may cause a 13.000 times risk for back pain in pregnant women.

History of lifting heavy objects and history of excessive bending are related to occupation, environment and family support. For the type of work that requires a lot of energy (heavy work), non-neutral work postures (bent and twisting, repetitive movements, and long working hours) will greatly affect the occurrence of back pain amongst occupational populations, including back pain in pregnant women (Osinuga et al., 2021). Unfamiliar environment, high noise level, lighting and high activity in the environment can also exacerbate pain.

Other than that, support from family and closest people is one of the important factors that affect individual pain perception. For example, a single individual, without

family or friends who support it, tend to feel more severe pain than those who received support from family and close people (Potter & Perry, 2012). Especially during the pregnancy, social support for pregnant woman is very much needed. Not only physical support in completing daily work but also psychological support so that pregnant women do not experience fatigue and anxiety which can exacerbate the back pain they experience.

Pregnant women who are alone doing household activities will have a tendency to lift heavy objects and or often bend over when picking up an object that is located below (Osinuga et al., 2021). It is better if pregnant women may be able to do good body mechanics with the correct position when taking the items below, namely by first bending the knees and using the leg muscles to straighten again and also to avoid slouching which can strain the back, including even taking something light (Puspitasari & Ernawati, 2020).

To reduce and to prevent back pain complaints and establish safe daily activities during pregnancy, pregnant women need correct body mechanics. Body mechanics in pregnant women is a good body position to adjust body changes in pregnant women, especially the lordosis of the spine. Body mechanics in pregnant women includes the correct way of standing, sleeping position, lifting weights, and squatting positions.

Mechanical body will facilitate movement that body allows physical mobilization without muscle strain and excessive use of muscle strength. Therefore, proper body mechanics reduces the risk of musculoskeletal injuries including the vertebral region which will cause back pain or spinal pain (Puspitasari & Ernawati, 2020). Based on the results of research which was conducted by Puspitasari and Ernawati, it was obtained p value of 0.000 where the value is below the critical limit of the study or a significance point of 0.05 (5%) so it can be concluded that there are benefits of body mechanics exercise on reducing low back pain in third trimester pregnant women (Puspitasari & Ernawati, 2020).

One of the factors related to the incidence of back pain in pregnancy is physical activity such as yoga exercise. Based on the result of this study, the average yoga exercise of the respondents was 1.8 (SD=0.41) with the OR value was 0.143. The yoga exercise's OR value = 0.143, it means that the yoga exercise may cause a 0.143 times risk for back pain in pregnant women. The OR value is very low, almost close to zero, which indicates that it is precisely by doing yoga regularly, the incidence of back pain in pregnant women may be able to be prevented. But if pregnant women do yoga irregularly, they may have a small risk of experiencing back pain during pregnancy (Situmorang et al., 2020).

According to Situmorang et al, in their research results, prenatal yoga was very effective in reducing physical complaints such as back pain in third trimester pregnant women (Situmorang et al., 2020). In addition, based on the results of research by Wulandari et al that on 18 pregnant women who were taken by purposive sampling, after doing yoga exercises, showed p value = 0.000 which means that there was an effect of prenatal yoga on back pain in pregnant women third trimester (Wulandari et al., 2020).

Yoga exercise is a method powerful healing positive on physical health, psychology, feelings, and reactions to life which is being carried out. A series of yoga exercises aims to create balance of body and soul, strength body, serenity, peace, prepare pregnant women physically, mental and spiritual included in the preparation for childbirth. Yoga practice has no negative effect for mother and on the fetus

development (Situmorang et al., 2020). Prenatal Yoga exercises can be done at home, in the ante natal class or at the midwife's practice (H. P. Astuti et al., 2021)

Meanwhile, in her research, (Wulandari et al., 2020) stated that prenatal yoga exercise was a modification of customized basic yoga gymnastics movement with the condition of pregnant women. Yoga was an exercise of body, mind and mental which was very helpful for pregnant women in flexes joints and soothes thoughts, especially in the second and third trimester of pregnant women. Movement in prenatal yoga was made with a slower tempo and adjust to the space capacity pregnant mother (Wulandari et al., 2020).

In fact, yoga exercises can not only reduce back pain during pregnancy, but also reduce anxiety for pregnant women. Based on Aryani et al's research that p value was 0.000 which means that there was an effect of prenatal yoga on the anxiety of third trimester pregnant women in waiting for delivery (Aryani et al., 2018). In addition, research by Situmorang et al, proved that after being given intervention in the form of prenatal yoga, most primigravida pregnant women do not experiencing anxiety (72.2%).

So that yoga exercises do have many benefits for pregnant women (Situmorang et al., 2020). As stated (Aryani et al., 2018) that anxiety experienced by pregnant women will be able to bring up physical symptoms such as fatigue, lethargic, irritable, restless, dizzy, nauseous and lazy. Changes that occur in the physical affect the psychological and physical aspects on the contrary, so that it is easy for mothers pregnant to experience trauma.

Even the feelings or trauma felt by pregnant women can be felt by the fetus, namely by showing a reaction to stimulation that comes from outside the mother's body and causes a traumatic delivery (Aryani et al., 2018). Therefore, it is important to prevent back pain experienced by pregnant women from getting worse by knowing the risk factors associated with the incidence of back pain in pregnant women and applying them in daily life during pregnancy.

CONCLUSION

It can be concluded that a history of excessive bending that causes the muscles in the back to become tense has the greatest risk (thirteen times) of back pain in pregnant women with an OR value = 13,000. This is recommended that pregnant women may be able to do good body mechanics with the correct position when taking the items below, namely by first bending the knees and using the leg muscles to straighten again. It is also recommended to avoid slouching which can strain the back, including even taking something light.

The implication of the results of this study is that as health workers, they have to provide good health education to pregnant women regarding the factors that can cause back pain so that back pain for pregnant women can be minimized, not causing complications.

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Original Research

Si Embul: Assesment In Baby And Children To Increasing Haemoglobin Level In 6-24 Months Children

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ABSTRACT

Background: Iron deficiency anemia is one of the health problems in Indonesian children that need special attention because it has an impact not only for now but also on the upcoming time. The si Embul innovation program is a comprehensive activity that includes growth and development checks, evaluation of exclusive breastfeeding, identification of anemia by checking the baby's hemoglobin, and consultations with nutritionists and doctors.

Methods: This research used descriptive correlational with a cross-sectional research design. The sample was all children aged 6-24 months who are included in the Si Embul Program at the Tegalrejo Health Center in 2017-2019 as much as 149 children. The univariate analysis describes the characteristics of the research subjects. Relationship between the Si Embul Program and anemia status analyze using bivariate analysis, carried out with chi-square at a significant level of 5%. The research was carried out using secondary data in patient medical record and register books and taken from both books.

Results: The incidence of anemia was more common in female respondents as many as 31 people (20.81%). Based on the baby's birth weight, the incidence of anemia was more common in BBLN (normal birth weight) as many as 50 people (33.55%). The Si Embul program was associated with anemia status in children aged 6-24 months with a p-value of 0.004 ($p < 0.05$).

Conclusion: The si Embul program was associated with anemia status in children aged 6-24 months with a p-value of 0.004. This shows that the existence of Si embul program can reduce the incidence of anemia in children aged 6-24 months.

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INTRODUCTION

One of the serious global public health problem is anemia, affecting most of the pregnant women and young children. The World Health Organization (WHO) estimates

that 42% of children under 5 years worldwide suffering from anemia (WHO, 2016). Anemia is a condition in which the concentration of hemoglobin in them is lower than normal. Hemoglobin is needed to carry oxygen and if the child has too few or abnormal red blood cells, or not enough hemoglobin, it will have an impact on performance and cognitive growth (WHO, 2016).

Iron Deficiency Anemia (IDA) is anemia caused by a lack of iron which is needed for the synthesis of hemoglobin. This type of anemia is the most common anemia (Amalia & Tjiptaningrum, 2016). The age group with the highest incidence of IDA is children under five years. Many studies reveal the fact that IDA has occurred in infants aged 0-6 months, especially at the age of 6-12 months. The older the baby, the greater risk of suffering from IDA (Ringoringo, 2016).

The incident of IDA is higher in infant, especially in premature infants (25-85%) and infants who consume exclusively breast milk without supplementation. Normal hemoglobin levels are generally different in the elderly and children, in children is 11 grams. Anemia occurs in 80% of children aged 6-23 months (Prieto-Patron et al., 2020). Anemia is dominant in male infants, while iron deficiency peaks at the age of 9-12 months. If anemia occurs in adults, it will be easy to detect, but if anemia occurs in infants or toddlers, it is not detected quickly, because infants/toddlers cannot reveal if they have signs of anemia.

Inadequate food intake, especially iron, will affect the nutritional status of children under five years and iron deficiency can occur, resulting in decreased blood hemoglobin (Hb) levels and causing iron deficiency anemia (Faiqah et al., 2018). Children more often eat foods with high carbohydrates than animal side dishes. Insufficient food intake causes them to lack micronutrients such as iron.

In research conducted by (Flora et al., 2022), iron deficiency in Tuah Negeri District is strongly related to stunting in elementary school children. However, in a study conducted by Bahagia Febriani et al., 2020 stated that low birth weight and low zinc level are the risk factors that cause stunting, while calcium, ferritin, albumin and vitamin D, were not associated.

The risk of stunting toddlers experiencing anemia is 2.3 times compared of normal toddlers. Then, toddlers who are overweight (z score > 2) tend to have anemia. Other causes of nutritional anemia are consumption, insufficient iron and inadequate absorption of iron, increased needs due to physical growth, and blood loss due to chronic bleeding, parasitic and infectious disease.

Infants who were not exclusively breastfed for 4-6 months had an 18.4 times higher risk of developing iron deficiency anemia than infants who were exclusively breastfed. Exclusive breastfeeding is recommended to be given to babies up to the age of 6 months and by providing complementary foods at the beginning of the age of 6 months, after that it is continued by continuing to give breast milk until the age of 2 years (Faiqah et al., 2018).

The use of iron supplements in infants aged 0-12 months provides benefits, namely preventing and treating iron-deficiency anemia in infants with a dose recommended by the Indonesian Pediatrician Association (2011), which is 2-3 mg/kgBW/day and the duration of iron supplements using from the 2016 WHO guidelines on the use of iron supplements should be used for 3 consecutive months to prevent anemia or deficiency. Infants who are exclusively breastfed for 6 months and then do not receive adequate iron from food are recommended to give iron supplements

of 1 mg/kg/day. Infants who are breastfed need to be given iron supplements from 4 or 6 months to prevent iron deficiency in the first year of life.

WHO states that iron supplementation can be given in bulk, starting at the age of 2-23 months with a single dose of 2 mg/kgBW/day. 1,5 infants with low birth weight have a 10-fold higher risk of iron deficiency. When there is a growth spurt, the need for iron will increase in the first two years of life. In term infants and children under 2 years, supplementation is given from the age of 6-23 months with 2 mg/kg/day.

According to WHO, breastfeeding greatly contributes to the health and nutritional status of infants. Breast milk contains all the nutrients that babies need. In addition to anemia, exclusive breastfeeding and incomplete or suboptimal intake can increase the risk of stunting. Stunting can affect the growth and development and future of children and has a negative impact, especially for children aged two years because it can interfere with their development (Purnamaningrum et al., 2022).

Children who suffer from stunting up to the age of 5 years can continue into adulthood and reduce the risk of offspring with low baby weight (Purnamaningrum et al., 2019). Children with low energy intake are six times more possibly to experience stunting than children with adequate energy intake and children with low protein intake are 3.22 times more likely to experience stunting than children with adequate protein intake (Hendraswari et al., 2021).

Tegalrejo Health Center is one of the public health centers in Yogyakarta City which has the Si Embul innovation program or Pemeriksaan Bayi Usia Enam Bulan (Six Months Baby Examination). The program which has just been implemented by the only health center of 18 health centers in the city of Yogyakarta has the aim of preventing anemia in infants, preventing impaired growth and development of infants and preventing malnutrition in infants.

The Si Embul innovation program is a comprehensive activity that includes growth and development checks, evaluation of exclusive breastfeeding, identification of anemia with infant hemoglobin examination, consultation on Infant and Child Feeding with nutritionists and doctor consultations regarding infant anemia.

Data on baby visits with hemoglobin checks at the Tegalrejo Health Center in 2019 were 231 babies. A total of 100 infants had a hemoglobin level of less than 11grdL. The percentage of anemic infants from the results of the examination was 43.29%. Research conducted by Supriyati in 2018 at the Tegalrejo Health Center in Yogyakarta City concluded that exclusive breastfeeding was statistically related to the anemia incidence in infants aged 6 months (Supriyati et al., 2018).

Based on the information that has been collected, no research examines the effectiveness of the Si Embul program at the Tegalrejo Health Center, Yogyakarta City. So it is still necessary to study the increase of the hemoglobin levels in children. Researchers determined the effectiveness and increase in hemoglobin levels as research variables. On this basis, the researcher will conduct a study entitled the relationship between the Si Embul program and the hemoglobin levels of children aged 6-24 months at the Tegalrejo Health Center, Yogyakarta City.

MATERIALS AND METHOD

This study used descriptive correlational with a cross-sectional research design. Correlational descriptive research is a research design used to explain the relationship, estimate and test a theory that exists between two variables. The population was children aged 6-24 months in the working area of the Tegalrejo Health Center.

The sample in this study was all children aged 6-24 months who are included in the Si Embul Program at the Tegalorejo Health Center in 2017-2019 as much as 149 children. The research was carried out using secondary data in patient medical records and register books and taken from both books. The Si Embul Program is complete if they meet ≥ 2 times and incomplete if they meet ≤ 1 times.

Data analysis was carried out quantitatively. The univariate analysis describes the initial hemoglobin level given by the Si Embul program, the second and third visit hemoglobin levels. The relationship between the Si Embul program and hemoglobin levels analyze using the bivariate analysis, carried out with chi-square at a significant level of 5% ($p=0.05$).

This research was carried out after obtaining approval from the Poltekkes Kemenkes Yogyakarta by obtaining a research ethics letter from the Research Ethics Committee Poltekkes Kemenkes Yogyakarta Number: e-KEPK/POLKESYO/0593/IX/2020 dated 22 September 2020.

RESULTS

The following are the results of Frequency Distribution Based on Characteristics of Research Subjects.

Table 1. Frequency Distribution Based on Characteristics of Research Subjects

Variable	Frequency (N)	%
Gender		
Man	81	54.4
Woman	68	45.6
Baby Birth Weight		
Low Birth Weight	12	8.1
Normal Birth Weight	135	90.6
More Birth Weight	2	1.3
Breastfeeding		
Exclusive	135	90.6
Not Exclusive	14	9.4
Mother's Job		
Work	37	24.8
Does not work	112	75.2
Mother's Education		
Elementary school	3	2
Junior high school	19	12.8
Senior high school	87	58.4
College	40	26.8
Mother's Age		
< 20 Years	2	1.3
20-35 Years	133	89.3
> 35 Years	14	9.4

The characteristics of the respondents are mostly male as many as 81 people (54.5%). In terms of baby birth weight, most of the Normal Birth Weight was 135 people (90.6%). Viewed from the aspect of breastfeeding, most of them were given exclusively to 135 people (90.6%). The data above shows that most of the mothers do

not work as many as 112 people (75.2%). In terms of mothers' education, most of them are in senior high school education as many as 87 people (58.4%). Most of the mothers aged between 20-35 years were 133 people (89.3%).

Table 2. Characteristic Comparability

Variable	Anemia Status				P-Value	OR	95% CI	
	Anemia		No Anemia				Lower	Upper
	N	%	N	%				
Gender					0,126	0,597	0,307	1,159
Male	27	18.12	54	36.24				
Female	31	20.81	37	24.83				
Baby Birth Weight					0,069			
Low Birth Weight	8	5.36	4	2.68				
Normal Birth-Weight	50	33.55	85	57.04				
More Birth Weight	0	0	2	1.34				
Breastfeeding					0,404	1,667	0,497	5,587
Exclusive	54	36.24	81	54.36				
Not Exclusive	4	2.68	10	6.71				
Mother's Job					0,816	1,094	0,512	2,337
Work	15	10.06	22	14.76				
Does not work	43	28.85	69	46.30				
Mother's Education					0,068			
Elementary School	3	2.01	0	0				
Junior High School	7	4.69	12	8.05				
Senior High School	29	19.46	58	38.92				
College	19	12.75	21	14.09				
Mother's Age					0,921			
< 20 Years	1	0.67	1	0.67				
20-35 Years	52	34.89	81	54.36				
> 35 Years	5	3.35	9	6.04				

The incidence of anemia was more common in female respondents as many as 31 people (20.81%). Based on the baby's birth weight, the incidence of anemia was more common in normal birth weight as many as 50 people (33.55%). Based on the history of breastfeeding, the incidence of anemia was more common in mothers who gave exclusive breastfeeding as many as 54 people (36.24%).

Based on the work status of the mother, most cases of anemia occurred in mothers who did not work as many as 43 people (28.85%). Based on the level of education, most cases of anemia occurred in mothers who had a high school education level of 29 people (19.46%). Based on maternal age, cases of anemia occurred in mothers aged 20-35 years as many as 52 people (34.89%).

From the significance value, there are no characteristics associated with anemia in infants aged 6-24 months (p-value > 0,05). According to result by gender, girls are 0.59 times more likely to be anemic than boys. In exclusive breastfeeding, children who are not exclusive breastfed were 1.66 times more likely to suffer from anemia, and children from working mothers are 1,09 times more possibly to be anemic.

Table 3. Connection Si Embul Program with Hemoglobin levels for children aged 6-24 months

Variable	Anemia Status				Amount	p-value	OR	95% CI	
	Anemia		No Anemia					Low	Up
The Si Embul Program	N	%	N	%	N	%			
Complete	40	26.84	80	53.70	120	80.54	0.04	0.30	0.10
Incomplete	18	12.08	11	7.38	29	19.46		0.06	0.32
Total	58	38.92	91	61.08	149	100			

Si Embul program was associated with hemoglobin levels in children aged 6-24 months with a p-value of 0.004 ($p < 0.05$). This shows that the existence of a screening Si Embul program can reduce the incidence of anemia in children aged 6-24 months. Then, children with incomplete examination of the Si Embul program are 0,30 times more likely to suffer from anemia.

DISCUSSION

This study examines the relationship of Si Embul Program with hemoglobin levels for children aged 6-24 months at the Tegalrejo Health Center, Yogyakarta City. Iron deficiency in early life can lead to impaired brain development and other developmental effects. Iron is very important for brain development, anemia causes a lack of metabolic energy, myelin formation and memory function (Robert & Geer, 2018).

Results analysis showed that the incidence of anemia was more common in female children. The results of this study are in line with research by Faiqah (2018) which stated that anemia under five years was more common in women (Faiqah et al., 2018). The 2013 Basic Health Research (Riskesdas) showing that the proportion of anemia in women is higher than in men.

The result is not in line with the research by (Nazari, 2019), the prevalence of iron deficiency anemia was 18.2% (95% CI: 14.3-22) among the Iranian children under 6 years of age and according to the result by gender. The prevalence of iron deficiency anemia was higher in boys (17.7% with 95% CI: 5.9-29.5) than in girls (14.4% with 95% CI: 4.5-24.2). Based on WHO's report, the prevalence of iron deficiency among children aged 6-59 months is 62.3% in Africa, 22.3% in North America, and 53.8% in Southeast Asia (Nazari et al., 2019).

The results indicate that the incidence of anemia is more common in normal birth weight babies as many as 50 people (33.55%). This study is in line with the results of a study conducted by (Ramin Tabibi, 2013) which states that there is no statistically significant relationship between iron deficiency anemia and other anthropometric measurements, namely birth length, weight and current height. Research conducted by Faiqah stated that the incidence of anemia was more experienced by LBW infants (95.4%) compared to LBW (4.6%) (Faiqah et al., 2018).

However, research conducted by (Gebreweld A, 2019) stated that underweight children were 2.1 time (AOR=2.11; 95% CI: 1.23-10.18) more likely to be anemic than children with normal weight and children living in an urban area were 1.8 times (AOR=1.83; 95% CI: 1.05-3.18) more likely to be anemic than those living in a rural area. Based on Indonesian Doctor Association (IDI) recommendations in 2011 for term

infants and children under 2 years, iron supplementation is given if the prevalence of IDA is high (above 40%) or does not receive fortified food.

Research conducted at the Binjai City Health Center stated that infant birth weight was significantly associated with the incidence of anemia in infants aged 6-12 months with a p-value of 0.001 (Prihartini, 2021). Research conducted in South Wollo, Northeast Ethiopia among under-five children, stated that 112 (67.5%) had mild anemia, 52 (31.3%) had moderate anemia, and 2 (1.2%) had severe anemia. The highest prevalence was recorded in the age group of 6-11 months (57.0%) and it gradually decreases as the age of the children increased (Gebreweld A et al., 2019).

Another study conducted by (Prihartini, 2021) in Binjai Health Center regarding anemia in children under 6-12 months, reported that there was a significant relationship between baby birth weight and anemia in children age 6-12 months with p-value 0,001 (Prihartini, 2021). This study states that the incidence of anemia in children under five is more common in children with a history of exclusive breastfeeding. This is in line with research by (Prihatini, 2021) which states that the exclusively breastfeeding is associated with the incidence of anemia in infants 6-12 months with p-value 0,001.

Recent recommendations state that iron supplementation should be given from 4-8 weeks of age and continued until 12-15 months of age, with a single dose of 2-4 mg/kg/day regardless of gestational age and birth weight. Sri's research in 2019 stated that the complementary feeding (MP ASI) was not associated with the incidence of anemia. This study found that most of the 82 child (76.6%) received the complementary feeding at the age of fewer than 6 months.

But the clinical significance that the complementary feeding has an effect on anemia in infants is 1.57 times. This is a critical period for infants, because at the age of 6 months they get complementary foods which is a transition period from exclusive breastfeeding with additional food (Prieto-patron et al., 2017). Food components are a supporting factor in increasing hemoglobin levels in infants.

Children with early (<6 months) introduction of complementary foods was 3.5 times (AOR= 3.53; 95% Ci: 1.23-10.18) more likely to be anemic than children with timely (>6 months) initiation of complementary foods (Gebreweld A, 2019). Research conducted in Jatilawang Health Center, Banyumas Regency stated that children aged 12-36 months who did not receive exclusive breastfeeding was 61 times more likely to suffer from iron deficiency anemia compared to children who received exclusive breastfeeding with p-value 0.000. Exclusive breastfeeding is recommended to be given to infants up to 6 months old and by providing complementary foods at the beginning of the age of 6 months, and then continued by continuing to give breast milk until the age of 2 years (Dewi, 2018).

Children who are not exclusively breastfed are 11.33 times more likely to suffer from iron deficiency (Ahmad et al., 2018). Breastfeeding in infants can prevent anemia, iron absorption in infants from breast milk increases with the increasing age of the baby. Although the amount of iron in breast milk is low, the absorption is highest. As much as 49-50% of the iron in breast milk can be absorbed by the baby. While cow's milk can only be absorbed as much as 10-12% of iron.

The 2013 Basic Health Research (Riskesdas), the trend of breastfeeding in children 0–23 months increased by 34.5% in 2013, compared to 2010 which was 29.3% (Kemenkes RI, 2013). This study stated that the status of anemia in children was more common in mothers who did not work as much as 43 people (28.85%). Research in

Northeast Ethiopia found that income affected the incidence of anemia when compared to infants with higher incomes (Gebreweld A et al., 2019).

This is associated with the ability to buy so that there is no variety of food and insufficient intake including iron. Socio-economic conditions and low incomes allow them to get respiratory infections, diarrhea and cause nutritional deficiencies. Several studies have found that the incidence of anemia is higher in families with low incomes.

This is different with Ahmad research which states that children of working mothers are 8.29 times more possibly to suffer from iron deficiency (Ahmad et al., 2018). The workload can affect the mother's own nutrition and health, resulting in a decreased capacity to carry out other activities such as child-rearing. Then due to the limited time to work, their children's nutritional needs are not being observed.

In addition, there is a possibility for working mothers, their children will be cared for by other people who may not be good at raising children. The results of another study stated that income was not a factor in the incidence of anemia in infants, $p > 0.05$ was obtained. In this study 89 mothers (83.2%) with high incomes, although mothers do not work, they get income from their husbands.

In this study, the most anemia status was found in mothers with high school education, as much as 29 people (19.46 %). The maternal education has no significant relationship with the incidence of anemia in infants aged 6 months with a p-value of 0.119 (Yulita, 2018). The results of this study are not consistent with a study in rural Malaysia which found that maternal education was significantly associated ($p: 0.002$) with anemia under five and increased risk by 2.52 times. However, from this study, it can be seen that mothers with basic education have a risk of 2,4 times more likely to have anemic babies than mothers with advanced education (OR 2.847 95% CI 0.728-11.139).

Anemia status is more common in mothers aged 20-35 years by 52 people (34.89%). That maternal age has no statistically significant relationship with the incidence of anemia in infants aged 6 months with a p-value of 0.659 but the age of the mother at-risk is 1.2 times more likely to have an anemic baby than the mother's age who were not at-risk (OR 1.216 95% CI 0.510-2.899) (Yulita, 2018). The results of this study are different from Leal's research (2011) which states that mothers of at-risk age have a significant relationship in both urban and rural areas with the incidence of anemia in children under five.

The results of this study indicate that the Si Embul program is associated with hemoglobin levels in children aged 6-24 months with a p-value of 0.004 ($p < 0.05$). This shows that the existence of Si Embul program can reduce the incidence of anemia in children aged 6-24 months. The Si Embul innovation program is a comprehensive activity that includes growth and development checks, evaluation of exclusive breastfeeding, anemia identification with an examination of the baby's haemoglobin, consultation on Infant and Child Feeding with nutritionists and doctor's consultation regarding infant anemia.

The general objective of this program is to determine haemoglobin levels in infants aged 6 months. The specific objectives of this program are knowing how to prevent anemia in infants, knowing how to prevent malnutrition in infants, and knowing how to prevent developmental disorders in infants. There was a significant relationship between protein intake ($p: 0,300$), variation ($p: 0,000$) and food frequency ($p: 0,035$) on hemoglobin levels. In the formation of hemoglobin, protein has an important role. So to be able to increase hemoglobin levels in children, it is very necessary to increase protein

intake, regulate eating frequency and variety in food, not only from the amount of daily intake, iron and vitamin C intake alone (Rosalinna & Sugita, 2020).

At the age of one year, The American Academy of Pediatrics (AAP) and WHO recommends to screening for anemia (Wang et al., 2016). The American Academy of Pediatrics (AAP) and the CDC in America recommend checking hemoglobin and hematocrit (Ht) at least once at the age of 9-12 months and repeated 6 months later at the age of 15-18 months or additional examinations every 1 year. Once at the age of 2-5 years (Puspongoro, 2012). The AAP recommends screening for anemia in infants with risk factors such as eating disorders, impaired growth and lack of iron intake. To prevent iron deficiency in the first year of life, infants who are breastfed need to be given iron supplementation from the age of 4 or 6 months (Puspongoro, 2012).

To prevent anemia, WHO recommends giving iron tablets to children aged 6-23 months in areas with a high incidence of anemia (WHO, 2016). Babies before the age of 24 months are susceptible to iron deficiency, this is because iron stores during pregnancy are reduced and the diet contains less iron. Iron reserves in newborns will last until the age of 4-6 months and the incidence of anemia in children usually occurs from the age of 9 months. In contrast to premature babies, iron reserves can be used until the age of 3-4 years so that premature birth is a risk factor for anemia (Abdullah & Hospital, 2010).

Research conducted in India in 2021 on children aged 1-14 years suffering from iron deficiency anemia stated that there was a significant relationship between Ret-Hb and serum ferritin values after oral iron supplementation for 3 days (Behera et al., 2021). Malnutrition and obesity can affect iron status in children. Iron acts as a cofactor for tyrosine hydroxylation or a neurotransmitter synthesis enzyme.

The changes in dopamine levels in the substantia nigra and putamen can cause the lack of iron. Iron deficiency can also lead to ADHD (attention deficit hyperactivity disorder) in children. In a study conducted at Sanglah Hospital, it was stated that low ferritin levels (<45ng/mL) were found in 56% of the case group, namely children with ADHD and 16% of the control group. This means that ferritin levels has a significant relationship with the incidence of ADHD (Wirantari et al., 2020).

Iron deficiency can interfere with DNA synthesis, affect immunity, increase the risk of infection, and infant mortality (Anggraini et al., 2017). Some serious health problem cause by anemia such as decreased intelligence and motor and behavioral development in children (Faiqah et al., 2018). Anemia in toddlers can lead to stunted physical growth, impaired mental development, reduced intelligence, decreased work productivity, and impaired reproductive function in the future (Faiqah et al., 2018).

CONCLUSION

The incidence of anemia is more common in infants with normal birth weight, mothers who give exclusive breastfeeding, mothers who do not work, mothers with high school education levels and those aged 20-35 years. The Si Embul program was associated with anemia status in children aged 6-24 months with a p-value of 0.004 ($p < 0.05$). This shows that the existence of Si Embul program can reduce the incidence of anemia in children aged 6-24 months.

It is hoped that the Si Embul program can be maintained and continue to be implemented at the Tegalrejo Health Center.

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Original Research

Effectiveness Of Sanitary Napkins “Love Ms V” On Postpartum Mother’s Comfort And Anxiety Level

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ABSTRACT

Background: Management of postpartum that has been used by the medical team by using sanitary napkins. Not many specific sanitary napkins for postpartum have been created and researched. Sanitary napkins’s Love Ms V are sanitary napkins made from special cloth for postpartum mothers used to absorb bleeding in mothers. This study aimed to analyze the effectiveness of using Love Ms V sanitary napkins on the comfort and anxiety levels of postpartum mothers.

Methods: This research was a quasi experimental study posttest only design with control group. The participants were 70 postpartum mothers that selected by purposive sampling technique and divided into two groups: the intervention group (n=35) received sanitary napkins Love Ms V, and the control group (n=35) received disposable pads. The self made questionnaire of the comfort and the anxiety was used as a posttest. Mann-Whitney test were employed for data analysis.

Results: The increase in comfort level and the decrease in anxiety level was better in the intervention group then that in the control group. There was also a significant difference in the comfort levels ($p=0.000$) and anxiety levels ($p=0.003$) postpartum mother between the intervention group and the control group.

Conclusion: The use of sanitary napkins Love Ms V on postpartum significant affected toward increasing the comfort levels and reducing the anxiety levels.

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INTRODUCTION

The postnatal period is a significant phase in the lives of mothers and babies. It is a time of adaptation to parenthood, of the development of secure attachment for the neonate and young infant, and a time where bonds can develop within the family and with the community (Tamburlini, 2018). A wide range of complications have been reported during this period such as physical, mental, and emotional problems including fatigue, concerns with regard to sexual intercourse, hemorrhoids, constipation,

breastfeeding problem, anxiety, stress, depression, sleep disorders, bleeding, urinary incontinence, and posttraumatic stress disorder (McAuliffe et al., 2020).

The first six weeks after childbirth is common cross-culturally, and the WHO defines the postnatal phase as beginning immediately after the birth of the baby and extending for up to six weeks (42 days) after birth (Tamburlini, 2018). The direct causes of maternal death in Indonesia, as in other countries, are postpartum hemorrhage, infection, and eclampsia (Ummah & Ulfiana, 2018). The puerperium or postpartum is identical to the presence of lochia, which is bleeding due to the shedding of the uterine wall.

Bleeding during the puerperium has the potential to be experienced by all women after giving birth, either through a spontaneous process or by caesarean section. There is a diversity of bleeding in terms of color, amount and duration of vaginal bleeding during the first 6 weeks postpartum experienced by the mother (Hershey et al., 2018). Postpartum care plays an important role in prevention of postpartum complications. The most effective management of bleeding is used by the medical team for patients during postpartum by using a sanitary napkins.

At this time there are so many choices of brands of sanitary napkins specifically for postpartum with their respective advantages, starting from those that have various fragrances, colors, and shapes. The use of over-the-counter postpartum sanitary napkins makes mothers worry about the quality of postpartum sanitary napkins for their reproductive health, coupled with the different lengths of bleeding period each woman during the postpartum period and the presence of birth canal injury due to childbirth that are easily infected, which can have an impact on changes in psychological conditions such as comfort and anxiety. Puerperal infection is an inflammation that occurs in the reproductive organs caused by the entry of microorganisms or viruses into the reproductive organs during the labor process and the postnatal period (Safriana et al., 2019).

Women's reproductive health greatly affects the quality of maternal health. In the postpartum, managing the occurrence of bleeding is very important. More studies has been done about traditional methods of managing hygiene on the postpartum period. The study by Myint et. al aimed to focus on the prevalence of traditional practices used during postpartum period among women in Ampang, Malaysia.

The study of Myint et al found that the things that the mother paid attention during the postpartum period were traditional massage, herbal baths, food cooked with herbs, increasing breast milk, dietary prevention, behavioral prevention and hygiene precautions. The mothers focused on the extra hygienic precaution during the postpartum period. Extra hygiene precautions used by women were regular changing the sanitary pads and keeping the surroundings clean (Hla Myint et al., 2019).

Others study more discussed about the factors that influence maternal anxiety during the postpartum period. The study by Febriani et. al found that the factors influence postpartum maternal anxiety were age, parity, education, employment status and history of anemia (Febriani et al., 2020). There are not many studies regarding the management of bleeding using pads that are better used by postpartum mothers to reduce anxiety and increase comfort. This study has new things that can be showed about managing postpartum mothers with special pads such as Love Ms V sanitary napkins.

The sanitary napkins that are often used are disposable sanitary napkins which are considered less economical in terms of cost. In addition to this, the comfort level of the

pads is also a priority for postpartum mothers. A study the management of postpartum hemorrhage with a mini-sponge tamponade device founded mini-sponge tamponade device is comprised of two components: compressed mini-sponges contained within a strong mesh pouch and a tubular applicator.

Compressed mini-sponges rapidly absorb blood, expand within seconds, and exert sustained pressure uniformly to bleeding sites. The sponges are deployed within a mesh pouch to facilitate simple vaginal removal (Rodriguez et al., 2020). However, the mini-sponge tamponade device is used for managing of postpartum hemorrhage where bleeding is more than 500 ml in 24 hours.

One of the postpartum care goals is to maintain the health of mother and baby both physically and psychologically (Setyowati & Rosnani, 2019). During the puerperium, managing of lochia discharge or bleeding can use sanitary napkins such as during menstruation. Sanitary napkins that are economical, comfortable, environmentally friendly, hygienic, and efficient because they can be reused after washing are very effective postpartum sanitary napkins to be used in fulfilling comfort and reducing anxiety levels. Sanitary napkins Love Ms V is a hygienic and efficient cloth sanitary napkin product for mothers during the postpartum period.

This sanitary napkin is a local product made of fabric and yarn which is specially made for the comfort and trendy of post-partum patients. This product is made of a liquid-resistant fabric, has a large capacity, high absorption, and can also be washed then more practical and economical. These sanitary napkins are rectangular in shape, soft, comfortable to move and anti-slip. This product is a work that passed the 2019 funding student creativity program.

Sanitary napkins Love Ms V will be tested by comparing disposable sanitary napkins to mothers who are in the puerperium or postpartum. Therefore, this study were analyze the effectiveness of using sanitary napkins Love Ms V on comfort and anxiety levels in postpartum mothers.

MATERIALS AND METHOD

This research was a quasi experimental study design with control group and posttest only. This study was conducted in one of the Private Hospital in Yogyakarta, Indonesia. There were 71 mother postpartum start from September to October 2021. A purposive sampling technique was used to recruit as subject in this study.

The 70 samples matched with the inclusion criteria, including: willing to be a respondent, mothers during the postpartum period with lochia secretions, and willing to use produk Love Ms V. Respondents who were included in the exclusive criteria were postpartum mothers with advanced complications of birth canal injuries. The samples were divided into two groups: the 35 respondents used product Love Ms V as intervention group, and the 35 respondents used disposable sanitary napkins as control group.

Sanitary napkins Love Ms V is a hygienic and efficient cloth sanitary napkin product for mothers during the postpartum period. This sanitary napkin is a local product made of fabric and yarn which is specially made for the comfort and trendy of postnatal patients. This product is made of a liquid-resistant fabric, has a large capacity, high absorption, and can also be washed, therefore that more practical and economical.

These sanitary napkins are rectangular in shape, soft, comfortable to move and anti-slip. Four (4) pieces of sanitary napkins Love Ms V were given to each intervention respondent, while for control respondents get one (1) pack of disposable sanitary

napkins. After 2 days of using Love Ms V in the intervention group and 2 days of using disposable sanitary napkins in the control group, all the respondents were distributed a questionnaire to measure the level of comfort and level of anxiety.

In this study, self-made questionnaires were delivered to the respondents to measure the levels of comfort and anxiety. Each questionnaire consists of 10 statement items. Scoring system to the comfort questionnaire consists of three categories: uncomfortable (score 1-13), comfortable (14-27), and very comfortable (28-40), while the anxiety questionnaire consists of three categories also: severe (score 1-13), moderate (14-27), and mild (28-40).

Pilot study were conducted on 15 postpartum excluding research subjects to test the validity and reliability of the self-made questionnaire. The validity and reliability test for the comfort questionnaire were the validity results of each statements >0.4409 and the reliability results were 0.747. The validity results for the anxiety questionnaire on each statements were >0.4409 and the reliability results were 0.772. Therefore, 10 statements on the comfort questionnaire and 10 statements on the anxiety questionnaire were used entirely.

The data were collected from September to October 2021, as follows: selected research subjects according to the inclusion criteria, divided the group, conducted the intervention for 2 days, and administered posttest questionnaire. Data analysis was carried out through some stages: (1) editing to check the completeness of the data, (2) coding, (3) entry, and (4) tabulating. Univariate analysis was carried out on characteristics respondent such as age, level of education, occupations and parity which were presented on proportion. The data normality of self-made questionnaire by the Shapiro-Wilk test showed that the data were not normally distributed. The Mann-Whitney U Test was used to analyze the data after the intervention.

This research protocol had been approved by the Health Research Ethics Committee of STIKES Bethesda Yakkum (reference number of 077/KEPK.02.01/IV/2021) and the declaration of ethics applies during the period April 29, 2021 until April 29, 2022. Before conducting the study, the researchers explained the purpose of the study, the procedures for data collection, and the benefits of participation to the potential subjects. The participants were offered an opportunity to ask any questions, and were assured that they could withdraw from the study at any time. Their personal information was kept confidential.

RESULTS

The respondents' characteristics in this study, including age, level of education, occupations and parity were not statistically different between the two groups. The result shows that the majority of the respondents in both groups were the age 17-25 years old, graduated senior high school, work as housewife and giving birth for the first time. The respondents' characteristics are presented in Table 1.

Table 1. Characteristics of respondents (n=70)

Variable	Intervention Group (n=35)		Control Group (n=35)	
	f	%	f	%
Age (years)				
Late adolescence (17-25 years old)	14	40	15	42,9
Early adulthood (26-35 years old)	12	34,3	13	37,1

Variable	Intervention Group (n=35)		Control Group (n=35)	
	f	%	f	%
Late adulthood (36-45 years old)	9	25,7	7	20
Level of education				
Junior high school	4	11,4	2	5,7
Senior high school	21	60	24	68,6
Diploma	1	2,9	6	17,1
Bachelor and Magister	9	25,7	3	8,6
Occupation				
Housewife	28	80	24	68,5
Private employees	6	17,1	8	22,9
Government employees	1	2,9	3	8,6
Parity				
1	20	57,2	19	54,3
2	7	20	6	17,1
3	6	17,1	5	14,3
4	0	0	1	2,9
5	2	5,7	4	11,4

The comfort level of postpartum mother after the intervention were mainly in the comfortable category in the both groups. The comfortable category (57,2) in intervention group and to the control group, which also were mostly in the comfortable category (94,3). Meanwhile, in the very comfortable category the intervention group has a higher proportion (42,8) rather than in the control group (5,7).

There were significant differences in comfort level after the intervention in both groups ($p=0.000$). It can be concluded that there was an affect on the comfort level of postpartum mother using sanitary napkins Love Ms V. The comparisons of the comfort level after the intervention are outlined in Table 2.

Table 2. Comparisons of the comfort level after the intervention

Comfort level	Intervention (n=35)	Control (n=35)	p value
	f(%)	f(%)	
Uncomfortable	0 (0)	0 (0)	0,000
Comfortable	20 (57,2)	33 (94,3)	
Very Comfortable	15 (42,8)	2 (5,7)	

*Mann-Whitney test

The anxiety level of postpartum mother after the intervention were mainly in the moderate category in the both groups. The moderate category (60) in intervention group and to the control group the comfortable category (74,3). Meanwhile, in the mild category of the intervention group has a higher proportion (40) rather than in the control group (20).

There were significant differences in anxiety level after the intervention in both groups ($p=0.003$). It can be concluded that there was an affect on the anxiety level of postpartum mother using sanitary napkins Love Ms V. The comparisons of the anxiety level after the intervention are presented in Table 3.

Table 3. Comparisons of the anxiety level after the intervention

Anxiety level	Intervention	Control	p value
	(n=35)	(n=35)	
	f(%)	f(%)	
Mild	14 (40)	7 (20)	0,003
Moderate	21 (60)	26 (74,3)	
Severe	0 (0)	2 (5,7)	

*Mann-Whitney test

DISCUSSION

This study found that the sanitary napkins Love Ms V was significant affect in increasing comfort and decreasing anxiety among postpartum mothers. The findings in this study indicated that using sanitary napkins Love Ms V affected the levels of comfort and anxiety in postpartum mothers. The use of sanitary pads that good in handling blood flow will provide a sense of comfort and security to the user, then they are not afraid of leakage both during activities and sitting (Austrian et al., 2021).

There have not been many studies regarding the management of bleeding using pads that are better used by postpartum mothers to reduce anxiety and increase comfort. Other studies discuss more about the factors that influence anxiety during the puerperium and focus more on the amount of blood during the puerperium which shows postpartum hemorrhage.

Sanitary napkins Love Ms V provides comfort to postpartum mothers due to its long shape and tight binding makes it feel comfortable when used and the capacity is large enough to make postpartum mothers comfortable to use it both for activities and sitting. Using a clean material to absorb or collect blood that can be changed privately as often as needed during the bleeding period, using soap and water to wash the body as needed is management for maintaining female reproductive hygiene (Chauhan et al., 2021).

In this study, no signs of irritation were found in the intervention respondents. The benefits of caring good hygiene when getting periods include a reduced risk of infection on unitary track, rashes in genitals area, and cancer (Sihra et al., 2018). Poor hygiene practices because of water and sanitation limited accessibility, lack of privacy, and unaffordability of pads can appearing some adverse health outcomes like reproductive tract infections and genetalian raches (Wirata & Ballena, 2021).

The healing process of the organs of the birth canal during the postpartum period is very susceptible to infection, because the genital organs are undergoing an inflammatory process after the baby comes out. In addition to the genital organs, the release of lochia also really needs to be concerned. The lochia is the vaginal discharge that originates from the uterus, and comes out from vagina (Hershey et al., 2018). The lochia in 1 to 4 days is initially red and comprised of blood and fragments of decidua, tissues from endometrial, and mucus.

The lochia then changes color lasting 5 to 9 days from red to yellowish or pale brown. It is comprised mainly of blood, leucocytes and mucus. Finally, more than 10 to 14 days the lochia contains mostly mucus and it is white. The lochia can comes out up to 5 weeks after birthing.

The might be an indicator of uterine subinvolution is persistence of red lochia beyond one week. The might be a sign of infection is presence of an offensive odor or tissue with large pieces or blood clots or the absence of lochia. The cervix and vagina

may be edematous and bruised in the early postpartum period and gradually heal back to normal (Rodriguez et al., 2020).

In addition, in using sanitary napkins Love Ms V is very reusable because it is made of cloth then that it can be washed again with soap and dried in the sun and then used. This makes postpartum mothers feel more comfortable because of the reduced use of chemicals in napkins. From an economic point of view, the use of sanitary napkins. Love Ms V is very cheap when compared to the use of pads in general. Only by buying 4 sanitary napkins Love Ms V can be used during the postpartum period with their reusable nature.

Social-economic becomes one of the factors or problems that disturb the minds of postpartum mothers and can have an impact on the level of anxiety and the health of the mother and newborn (Li et al., 2020). Postpartum mothers are expected to get comfort, then that they can reduce anxiety. Postpartum mother anxiety can be caused by several factors. During the postpartum period, the number of demands and responsibilities increases, which can also increase worry and distress. Several factors have been found to contribute to the onset of postpartum anxiety levels such as breastfeeding difficulties, inadequate social support, financial difficulties, maternal health, and child welfare (Radoš et al., 2018).

Anxiety is a personal feeling where there is a general reaction to the inability to handle a difficulty or loss of sense of security in the form of mental tension that makes anxiety which will eventually lead to or be marked by physiological and psychological changes. Anxiety is one of the psychological discomforts experienced by postpartum mothers that can affect breast milk production (Pratiwi et al., 2021). Anxiety experienced by postpartum mothers has various causes, by providing comfort to the use of sanitary napkins in the postpartum period will have an impact on reducing the emergence of excessive anxiety.

Postpartum mothers need to reduce the anxiety that they feel because it can interfere with the mother's recovery and the relationship with the newborn (Radoš et al., 2018). Support mental health for postpartum mothers can improve the welfare of mothers, newborns, families and communities (Chrzan-Dętkoś et al., 2021). Postpartum mothers really need to reduce anxiety and increase comfort to increase milk production, adequate social support, financial goals, improve maternal health, and child welfare.

The use of soft sanitary napkins with a lot of capacity provides comfort and is not afraid of leaks which can have an effect on increasing self-confidence and reduce anxiety in activities (Wang & Anne Arochi, 2018). Comfortable sanitary napkins are needed for women's reproductive health, because they greatly affect the health of organs that are in direct contact and require more attention (Kuncio, 2018). The use of sanitary napkins Love Ms V on postpartum significant affected toward increasing the comfort levels and reducing the anxiety levels.

Therefore, sanitary napkins Love Ms V could be considered to use it in hospital practice for postpartum mothers to provide comfort and minimize anxiety, as well as to improve care for postpartum mothers.

CONCLUSION

“LOVE MS. V” is a hygienic and efficient cloth sanitary napkin product for mothers during the postpartum period. “LOVE MS. V” is effective in providing comfort for postpartum mothers because this product is made of fabric that has a large capacity, is anti-permeable, has high absorption, and can be washed so that it is more practicaly

and economical. In addition, these pads are rectangular in shape, soft, comfortable to move, and anti-slip.

Nurses in the clinic can use these pads to treat bleeding/lochia during the postpartum period. The use of sanitary napkins Love Ms V on postpartum significantly affected toward increasing the comfort levels and reducing the anxiety levels. Therefore, sanitary napkins Love Ms V could be considered to use it in hospital practice for postpartum mothers to provide comfort and minimize anxiety, as well as to improve care for postpartum mothers.

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APPENDICES



Appendix 1. Sanitary pads Love Ms V for postpartum mothers

Original Research

Yoga To Improve Women's Sexual Function

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ABSTRACT

Background: Sexual function in women is closely related to women's reproductive health, if an individual experiences a disturbance in his sexual function, his reproductive function must also have problems. This sexual problem can be overcome by exercising, one of the recommended sports is yoga, Yoga is a sport that can improve sexual function and treat sexual disorders so that it can overcome sexual function problems. Aim of study is to analyze effect yoga to improving women's sexual function.

Methods: A Descriptive cross-sectional, with population were women who have been married, aged 20-45 years, yoga regularly. Amount of sample is 60 respondent, chosen using total sampling technique. The instrument used is the FSFI (Female Sexual Function Index) questionnaire, which is a questionnaire to measure sexual desire, sexual arousal, vaginal lubrication, orgasm, sexual satisfaction and pain. Data were analyzed using Chi-Square Test.

Results: Analysis Chi Square test with p-value 0.000, its mean p value <0.05. Yoga 25 times can improve the women's sexual function.

Conclusion: Yoga is associated with women's sexual function. Women who are married or have a partner can do yoga regularly because yoga has benefits for health and improves the sexual quality of women.

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INTRODUCTION

Sexual function in women is closely related to women's reproductive health. Individual has a disruption in his sexual function, his reproductive function must also have problems. Sexual function is one of the factors that have an important role in married life. Sexual relations can be optimal or not in married can affect function that affects the quality of life of the couple. Women who have a decreased function or even a disruption in sexual function is also known as sexual dysfunction, it will cause their sexual activity with their partner to be disrupted (Arini, 2018).

Sexual health problems are not given much attention, whereas sexual health affects general health and sexual problems negatively affect the quality of life (Nurmayani, Mulianingsih, et al., 2020). Sexual dysfunction is a combination of several

heterogeneous disorders characterized by clinically significant impairment in a person's ability to respond sexually or to experience sexual pleasure. Sexual dysfunction is a problem that results in the individual or his partner not being able to enjoy sexual intercourse and orgasm.

This occurs as a result of physiological disorders, cultural conflicts, interpersonal problems, or a combination of the three (Widjayanti, 2018). Thus, female sexual dysfunction is a term for four different disorders recognized in the DSM-5 namely disorders of female orgasm, female sexual interest or arousal, pain during genito-pelvic penetration and substance/ drug-induced sexual dysfunction (Arini, 2018).

Sexual dysfunction in women can be caused by various things. The sexual dysfunction includes significant psychological distress (anxiety, depression, lack of sexual confidence, poor self-esteem, impaired quality of life and interpersonal difficulties). The cause of an increase in sexual dysfunction is related to communication between partners. Factors that also contribute are biological factors (menopause status, namely length of menopause and age) and environmental factors, namely parity, age of partner (husband), education level, income, woman/wife occupation, length of marital relationship (Sofiatin et al., 2020).

According to research (Prastiwi et al., 2017), that complaints in menopausal women related to genital atrophy are dyspareunia (40%), genital itching (40.8%) and loss of libido (51%). In the journal International menopause society by Sturdee and Panay (2010), entitled Recommendations for the treatment of vaginal atrophy in postmenopausal women, 7243 women aged 40–59 years found a high prevalence of sexual dysfunction (56.8%) (Arini, 2020). If you look at the data, most women experience sexual dysfunction.

With such a high prevalence, it is natural that female sexual dysfunction cannot be underestimated, because it involves the quality of life of more than half of the female population. One of the causes of sexual dysfunction is the lack of prime physical condition caused by lazy to move such as sports. Only from a healthy physique comes healthy sex and a healthy physique is highly dependent on physical, mental and social health.

In addition to maintaining a healthy body, gymnastics can increase sexual ability naturally. Regular, regular and continuous physical exercise will get a person's sexual ability back after previously experiencing a decrease in sex drive (Nurmayani, Purqoti, Dewi, et al., 2020). Exercise also makes blood circulation to sensitive points which can increase sexual arousal. Regular exercise can reduce the degree of perimenopausal estrogen deficiency, which causes non-ovarian estrogen production (Razzak et al., 2019).

Health experts recommend that to overcome sexual problems in the family is to exercise regularly. Gymnastics that can be done by women is yoga, where yoga is a form of complementary and alternative therapy that is popular and widely practiced in developed countries. Pharmacotherapy to treat female sexual dysfunction is available but suffers from drawbacks such as poor adherence, poor efficacy, and side effects.

Many patients and yoga experts claim that yoga is useful in improving sexual function and treating sexual disorders, especially in tantric yoga, where hormones and balance are achieved through sexual union between a man and a woman. Yoga makes a feeling of calm, can train the flexibility needed in making love to increase sexual arousal. This is of course supported by the exercises in yoga (Agustin, 2018).

In understanding yoga for sex is a practice, yoga provides two disciplines of practice, namely movement and stillness. For married couples who feel less enjoying their sexual activity, then do yoga. Aim of study is to analyze effect of yoga to improve women's sexual function.

MATERIALS AND METHOD

A descriptive analytic with cross-sectional study in Lombok Yoga Center studio, Kota Mataram, held in August 2021. The population of women of childbearing age is 60 people they were taken using total sampling technique. Inclusion criteria: aged 20-45 years old and married, yoga at least 1 month before, actively do the yoga, Notin pregnant condition, Respondents stay in Mataram, and the exclusion criteria: Women under 20 years old, already menopause, in pregnant condition, reject to be a respondent, had physical health conditions.

The the FSFI (Female Sexual Function Index) questionnaire instrument is used for this research, which is to measure sexual desire, sexual arousal, vaginal lubrication, orgasm, sexual satisfaction and pain during sexual intercourse which was assessed in the last four weeks. The score range for sexual desire that is 1-5, a score of 1 indicates the respondent did not have a sexual desire. The score ranges from 0-5, a score of 0 indicates the respondent did not have a orgasmic arousal, satisfaction.

A score of FSFI ≥ 26.55 indicates no sexual dysfunction or normal, and a score of FSFI ≤ 26.55 is indicates as sexual dysfunction. This research use a Bivariate analysis by Chi Square test. This research has received an ethical clearance from STIKES Yarsi Mataram, No :19/Kep/STIKES/VII/2021, and has received a research permit from Lombok Yoga Center.

RESULTS

The following data is displayed Frequency Distribution of Age, Education, Occupation and Length of Respondents Doing Yoga at Lombok Yoga Center in Kota Mataram in 2021.

Table 1. Frequency Distribution of Age, Education, Occupation and Length of Respondents Doing Yoga at Lombok Yoga Center in Kota Mataram in 2021

Characteristics of Respondents	N	%
Age		
20-35 year	42	70,0
>35 year	18	30,0
Education		
College	35	58,3
Senior High School	25	41,7
Teacher	4	6,7
Housewife	22	36,7
Trader	3	5,0
Businessman	2	3,3
Government employees	3	5,0
Private	26	43,3
1 month	4	6,7
2 months	18	30,0
Frequency of doing yoga		

Characteristics of Respondents	N	%
4 times	53	88,3
3 times	3	5,0
1-2 times	4	6,7
SexualFunction		
NormalSexualFunction	56	93,3
Dysfunction	4	6,7
Total	60	100

Based on table 5.1, it can be seen that the highest age distribution is in respondents 20-35 as many as 42 people (70.0%). For education with the highest number of tertiary institutions as many as 35 people (58.3%), the highest type of work was private as many as 26 people (43.3%) and housewives as many as 22 people (36.7%).

Based on the duration of doing yoga, the highest number was in the category > 2 months as many as 38 people (63.3%), based on the frequency of doing yoga exercise the most 4 times as many as 53 (88.3%) and based on sexual function the most normal amounting to 56 (93.3%).

Bivariate Analysis

Table 2. Analysis of the Frequency of Respondents Doing Yoga Gymnastics (a week) at Lombok Yoga Center in Kota Mataram 2021

Yoga frequency	Sexual Function				<i>p-value</i>	<i>OR</i>
	Normal		Dysfunction			
	N	%	N	%		
Very good	53	88,3	0	0,0	0,000	25.712
Good	3	5,0	0	0,0		
Less	0	0,0	4	6,7		
Total	56	93,3	4	6,7		

Based on table 5.2, it was found that the highest respondent's sexual quality data was very good 53 people (88.3%). Based on the analysis Chi Square test with (*p-value* 0.000) <0.05 with OR 25,712, it means that there is a associated between yoga exercise to improve women's sexual function in Kota Mataram. Yoga have a 25 times to improve the women's sexual function.

DISCUSSION

Frequency of Respondents by Doing Yoga Exercise

The results of research conducted at Lombok Yoga Center in Kota Mataram on women of childbearing age who did yoga exercise very well as many as 53 people (88.3%) good as many as 3 people (5.0%) less as many as 4 people (6.7%). Yoga is an ancient practice that involves physical postures (asanas) and breathing techniques (pranaya-mas). There is also a cognitive component that focuses on meditation and concentration, which helps in achieving the goal of unity between the self and the spiritual.

Yoga is a technique that focuses on muscle structure, breathing mechanism, posture and mental health through exercise, proper breathing and maintaining posture. This is of course supported by the exercises in yoga, which in addition to creating a

feeling of calm, yoga can also train the flexibility needed in making love to increase sexual arousal (Agustin, 2018). According to research by Stanton et al., (2018) exercise can have a positive influence on women's sexual function.

Exercise increases sympathetic nervous activity on the nervous system and endocrine factors, where movement and flexibility throughout the body benefit healthy cardiovascular function and improve mood, especially in middle-aged women. From the results of this study, it can be seen that the respondents who do a lot of yoga are women with private jobs (43.3%) and housewives (36.7%) where women who work have a lot of work demands that are done every day, without any time limit.

When to start and when to stop, the lack of opportunity to take time to rest makes these activities a heavy burden and demands energy that sometimes exceeds the limits of mothers' abilities. This results in boredom and physical and mental fatigue, which ultimately due to the inability to manage these demands results in stress. Overcoming all of this requires activities such as sports and applying positive thoughts in every moment or event, one form of activity that makes a healthy and balanced life is yoga, besides that yoga also helps prevent and cure diseases, such as preventing rheumatic diseases, protecting the spine, prevent osteoporosis, improve blood circulation, protect the heart, lower blood pressure, lose weight, lower blood sugar (Agustin, 2018).

Judging from the education of the respondents who did the most yoga exercises, namely college education as many as 35 people (58.3%). Where the higher a person's education is, the information they have is wider and easier to accept, including information about reproductive health, whereas if a person's education level is low, the information obtained will be cut off (Monika et al., 2021). Higher education is considered necessary for women, because higher education can improve their standard of living, make decisions regarding their own health problems.

A woman who graduated from college will find it easier to get a job and be able to behave in a healthy life when compared to a woman who has low education. With higher education, a woman is increasingly able to be independent with something that concerns themselves. Especially in their sexual activity, educated women are able to find and know and can deal with problems that occur about their sexual activity related to sexual arousal or drive (Agustin, 2018).

Women's Sexual Function

Based on the results of the study, 56 respondents (93.3%) had normal sexual function and 4 (6.7%). Sexual function in women is the result of the integration of biological structures, life experiences, knowledge, behavior, and attitudes that are influenced by physical, psychological, interpersonal, and cultural factors (Gultom et al., 2018).

Based on the results of (Arini, 2020), sexual function will increase when women do light exercise such as gymnastics, where sexual function will be good by doing Orhiba exercises combined with Kegels. This situation indicates that the sexual function of women who routinely do orhiba combined Kegel exercises are very good and tend to have no problems even though they have entered menopause compared to those who do not do gymnastics or the control group.

In accordance with research results (Nurmayani, Purqoti, Dewi, et al., 2020), the sexual quality of women who are active in sports in Kota Mataram, with the number of respondents who actively do sports as many as 54 people and have good sexual quality 52 people (96.3%) and 2 people (3.7%). Factors that cause sexual quality disorders in

women of childbearing age, namely age, physical conditions such as cancer, kidney failure, heart disease and bladder problems, can cause sexual dysfunction, certain drugs including antidepressants, blood pressure drugs, antihistamines and chemotherapy drugs. Psychological, namely anxiety or depression that is not treated can cause or contribute to sexual and hormonal disorders such as contraception which can cause hormonal imbalances, contraceptive use suppresses the production of the hormone estrogen.

Judging from the highest age of respondents who did yoga exercise 20-35 years as many as 42 (70.0%) and >35 years as many as 18 (30.0%). At the age of 20, women have high self-confidence in their sexual life, this is because women are finding out about sexual desire, how to communicate it with their partner, how to channel sexual desire to the point of orgasm. At the age of 30, women are more open and accepting about sexual relations with their partners.

This also applies to stamina that begins to decline, sexual activity is only carried out to maintain household harmony and physical health. At the age of 40, women's desires at this age begin to decline, this is split with the obligations and responsibilities of women as a mother. Daily activities such as working with children make women less or less interested in having sexual relations.

Women of childbearing age (WUS) are women of reproductive age, namely 15-49 years old, whether they are married, widowed or unmarried whose organs are in good condition. Reproductive function properly between the ages of 20-45 years. After passing the age of 50 years, problems can occur in sexual relations because of getting older, working more and more, and even starting to arise various diseases such as high blood pressure, diabetes, reduced libido, or impotence (Emilia & Prabandari, 2019). Similar research to (Valani et al., 2019), which shows that the age of more than 35 years affects the occurrence of female sexual dysfunction.

Sexual function is part of the way in which a person participates in the desired sexual relationship. Sexual function is an important factor because in addition to mental issues, sexual function also includes a person's physical condition in achieving a good sexual relationship. In other words, the individual's inability to realize these conditions is called sexual dysfunction.

Sexual dysfunction is a reproductive health problem that can occur in individuals and is defined as a disorder of sexual function that often occurs. These disorders mean that the individual is late to feel sexual desire or urge, feels sexual arousal, has difficulty orgasming, and even experiences pain during intercourse.

The Association of Yoga to women's sexual Function

In accordance with the results of the study, the number of respondents doing yoga exercises in a week was very good as many as 53 people (88.3%), good as many as 3 people (5.0%) and less as many as 4 people (6.7%). Chi-Square that has been done, the results of the correction (fisher's Exact Test) with (p-value 0.000) <0.05 which means there is a relationship between yoga exercise and the sexual function of respondents to women of childbearing age in Kota Mataram.

Based on research (Agustin, 2018), where yoga is a popular form of complementary and alternative therapy. Pharmacotherapy to treat female sexual dysfunction is available but suffers from drawbacks such as poor adherence, low efficacy, and side effects. Many patients and yoga protagonists claim that it is useful in improving sexual function and treating sexual disorders.

Especially in tantric yoga, hormones and balance are achieved through sexual union between a man and a woman. This is of course supported by the exercises in yoga, where in addition to creating a feeling of calm, yoga can also train flexibility in lovemaking to increase sexual arousal. In conclusion, yoga can increase sexual arousal, in addition, an OR value of 44,231 is obtained, which means that there is a 44 times greater chance for PUS women who do not do yoga compared to women who do yoga.

According to research (Arini, 2020) there is an increase in sexual function in a positive direction, in menopause women by doing simple exercises such as Orhiba with a combination of Kegels or Orhiba alone. In line with the research of (Sobhgol et al., 2019) there is a good effect of pelvic floor muscle exercises (Kegels) on mothers during pregnancy and postpartum which serves to restore the pelvic organs to return to their previous state. This also applies to postmenopausal women where Kegels can reduce the incidence of urinary incontinence due to weak pelvic floor muscle contractions, so that sexual relations and quality of life can be better.

According to research (Rosida et al., 2017), where the results obtained with a t-test $p < 0.001$ which means that there is a significant effect between yoga and health-related quality of life scores, and there is also a significant difference between quality scores. Menopausal women who do yoga and don't do it concluded that yoga can affect the quality of life related to health in Menopause. Exercise is an active behavior to increase immunity by increasing metabolism and influencing the function of the glands inside so that it can protect the body from microorganisms that cause disease, including defending the body from stress.

Exercise is an activity that is very important to be done regularly to maintain physical fitness, regular exercise will make a person more enthusiastic and look younger than his age, and exercising can also relieve tension, stress and excessive fear that may interfere with pleasure in coitus. Exercise makes the blood cycle smoother, including blood flow to sensitive points that can increase sexual arousal. Physical and psychological health is the main capital to be able to perform sexual activity optimally, so that it will strengthen the husband and wife relationship (Nurmayani, Purqoti, Dewi, et al., 2020).

Married couples who have good sexual exercise will have better sexual quality compared to couples who have bad sexual exercise under the same conditions. A healthy sexual life is usually found in a healthy partner, both physically and psychologically. If one feels unfit or fit, sluggish and his stamina decreases and even feels sick, then his sexual activity will not run optimally, as well as his psychological state, if there are problems and many thoughts then his sexual activity will not run optimally.

Sex will increase regular sports activities, because exercise has been shown to increase testosterone levels for men and estrogen for women, both of which have a direct influence on sexual ability and satisfaction (Nurmayani, Purqoti, Dewi, et al., 2020).

CONCLUSION

According to the results of this research that held on Lombok Yoga Centre in Kota Mataram that there is an association between Yoga exercise on women's sexual function based on the result of Fisher's exact test with $(p\text{-value } 0,000) < 0,05$. The results of this research is expected for women who are married or have a couple can do yoga regularly because it will improve the sexual functions of women.

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