



Factors Related to the Incidence of Primary Dysmenorrhea in STIKes Muhammadiyah Cirebon Students in 2023

Lulu Tritanti , Vianty Mutya Sari, Nisa Rizki Nurfiti, Fika Nurul Hidayah
STIKes Muhammadiyah Cirebon, West Java, Indonesia
Corresponding Author: lulutritanti03@gmail.com

Abstract. The rate of dysmenorrhea is 50% experienced by all ladies within the world. Dysmenorrhea is a torment that happens amid a monthly cycle. The effect of essential dysmenorrhea can lead to fruitlessness or fruitlessness. Variables that can impact the event of dysmenorrhea are age at menarche, length of monthly cycle, body mass record, family history, and need to work out. This investigation, conducted utilizing observational analytics with a cross-sectional plan, points to recognizing the variables related to essential dysmenorrhea. The investigated test, comprising 40 respondents, was chosen through arbitrary inspection. The inquiry about the instrument utilized was a survey. Univariate information was analyzed distinctly, and bivariate information was analyzed utilizing the Chi-Square Test. The dissemination of essential dysmenorrhea in female STIKes Muhammadiyah Cirebon understudies was 32 respondents (80.0%). The most elevated extent of respondents who experienced essential dysmenorrhea was at the age of menarche, and there were 22 respondents (67.5%) with the comes about of the Chi-Square test $p=0.037$. The more significant part of the normal menstrual term was 32 respondents (80%) with the Chi-Square test, which comes to about $p=0.004$; the body mass file included within the ordinary category were 23 respondents (57.5%) with the Chi-Square test comes to about $p=0.013$. A family history of 25 respondents (62.5%) with Chi-Square test comes about $p=0.002$. There are 29 respondents (72.5%) who work out.

Keywords: Primary Dysmenorrhea, Dysmenorrhea Factors, Menstruation

INTRODUCTION

Reproductive health is the complete physical, psychological, and social well-being, not just being free from disease and injury in all parts of the reproductive system and its functions and processes. It is considered an essential factor in the health or well-being of all people. (Noviana, 2018)

Menstruation is a natural process that most women experience during their fertile period, which occurs once a month. This is due to the decay of the lining of the uterus (endometrium), which can no longer be fertilized by sperm cells. This usually occurs around the age of 12-13, but some women start menstruating earlier or later. When

menstruation begins to stop on its own, it is called menopause.(Setiani, I., & Setyawati, V. A. V., 2016)

There are quite a lot of menstrual disorders faced by women, including Pre-Menstrual Syndrome (PMS), amenorrhea, polyomenore, and oligomenorrhea, and one of them is dysmenorrhea (Wulandari, 2019). Dysmenorrhea is caused by the level of the hormone progesterone in the blood, prostaglandins, and stress/psychological factors that cause dysmenorrhea in some women (Lubis P, 2019)

World Health Organization (WHO), menstrual cramps in women are very common around the world. The incidence of dysmenorrhea is 1,769,425 (90%), of which 10-15% experience high dysmenorrhea. Generally, more than 50% of women in all countries will get dysmenorrhea. Urmia University of Medical Science, West Azarbaijan, Iran, out of a total of 293 female students, 74.3% felt dysmenorrhea, 17.7% had mellow dysmenorrhea, 45.7% had direct dysmenorrhea and 10.9% had severe dysmenorrhea. Predominance of dysmenorrhea (Najafi, 2018) in Indonesia, 107,673 individuals (64.25%), comprising 59,671 individuals (54.89%) encountering essential dysmenorrhea and 9,496 individuals (9.36%) encountering auxiliary dysmenorrhea. The frequency of dysmenorrhea in West Java is very high, comprising 24.5% gentle dysmenorrhea and 21.28% direct dysmenorrhea. In line with the comes about of investigation conducted at the Polytechnic of the Service of Wellbeing of Tasikmalaya Cirebon in 2016 of all female understudies of the Division at the Polytechnic of the Service of Wellbeing of Tasikmalaya Cirebon, the comes about were gotten that 87.1% experienced dysmenorrhea and the foremost comes about were in 47% of understudies majoring in Birthing assistance.(Puspitalsalri, 2020)(Triwahyuningsih, 2021)

The effect of essential dysmenorrhea in youthful young ladies may be tormented within the midriff and back that causes extreme inconvenience, such as interferometer with school exercises and experiencing pain during menstruation, which can be a symptom of endometriosis which, if not treated properly, can lead to infertility or infertility. (Fajarini, 2018)Dysmenorrhea pain is one of the causes of fertility problems in women of childbearing age if the pain felt is very disruptive to activities and is not handled correctly. (Momma, 2021)

There are many causes of dysmenorrhea, such as hormones caused by an increase in prostaglandin hormones in the body during menstruation, which causes the myometrium

to contract. Other factors include the period or beginning of menstruation, the length of menstruation, cycles, diet, stress, women's work, and place of residence. (Horman, 2021) A lopsidedness of the hormone progesterone within the blood, an increment within the substance of the hormone prostaglandins that fortify uterine compressions, and stretch components or mental issues that cause torment. (Proverawati A, 2015)

This was typically upheld by a ponder conducted by Beddu, Mukarramah, and Lestahulu (2015), conducted on 79 respondents, expressing a vital relationship between dietary status and essential documents with a p-value of 0.004. Be that as it may, it contrasts with the consideration conducted by Utari (2016), which was conducted on 49 respondents who concluded that there was no critical relationship and 23 relationships between dietary status and the frequency of essential dysmenorrhea with a p-value of 0.097.

METHOD

The inquiry plan utilized in this could be a cross-sectional think about with an observational analytical approach. This investigation was conducted within the S1 Birthing Assistance Ponder Program of STIKes Muhammadiyah Cirebon in Walk - July 2023. The population in this ponder is 93 understudies at level I-III within the S1 Birthing assistance Think about Program STIKes Muhammadiyah Cirebon, with an investigate test of 40 understudies taken utilizing irregular examining procedures, information collected, and after that analyzed utilizing SPSS adaptation 26. The test used utilized the Chi-Square Test.

DISCUSSION

Analisa Univariat

Incidence of Primary Dysmenorrhea

The rate of essential dysmenorrhea based on the recurrence of the respondents' characteristic conveyances is displayed within the taking after Table 1.

Table 1 Frequency Distribution of Respondent Characteristics at STIKes Muhammadiyah Cirebon in 2023

Characteristic of dysmenorrhea example	Frequency	Percentage %
Yes	32	80,0
Not	8	20,0
Total	40	100,0

Based on Table 1 of the incidence of primary dysmenorrhea, the majority of female students at STIKes Muhammadiyah Cirebon, as many as 32 respondents (80.0%), experienced dysmenorrhea during menstruation. In comparison, as many as eight respondents (20.0%) did not experience dysmenorrhea during menstruation.

Table 2. Characteristics of Primary Dysmenorrhea Incidence

Characteristic	Frequency	Percentage %
Menarche Age		
Early Menarche	27	67,5
Slow menarche	13	32,5
Total	40	100,0
Duration of Menstruation		
Normal	32	80,0
Abnormal	8	20,0
Total	40	100,0
Body Mass Index (BMI)		
Normal	23	57,5
Abnormal	17	42,5
Total	40	100,0
Family History		
Iya	25	62,5
No	15	37,5
Total	40	100,0
Exercise Habits		
< 3 times a week	29	72,5
>3 times a week	11	27,5
Total	40	100,0

Based on the table, it can be seen that most Menarche Age respondents are female understudies at STIKes Muhammadiyah Cirebon matured < 12 a long time, with as numerous as 27 respondents (67.5%). Based on the length of the feminine cycle, the larger part of female understudies at STIKes Muhammadiyah Cirebon Lama menstruate for 3-7 days, and as many as 32 respondents (80.0%). Based on the Body Mass Index (BMI), most female students at STIKes Muhammadiyah Cirebon IMT are Normal, with as many as 23 respondents (57.5%). The family history of the majority of female students at STIKes Muhammadiyah Cirebon was 25 respondents (62.5%) who had a family history of dysmenorrhea. As well as the habit of exercising, the majority of female students at STIKes Muhammadiyah Cirebon, as many as 29 respondents (72.5%) do sports < 3 times a week

Bivariate Analysis

Table 2 The Relationship Between Menarche Age and Occurrence

Dismenore Example							
Menarche Age	Ya		No		Total		P
	F	%	F	%	N	%	
<12 Years	19	47,5	8	20,0	27	67,5	Value 0,037
>12 Years	13	32,5	0	0,0	13	32,5	
Total	32	80,0	8	20,0	40	10,00	

Based on Table 2, the comes about between the age of menarche and the rate of essential dysmenorrhea in STIKes Muhammadiyah Cirebon understudies in 2023 out of 40 respondents, most of the lion's share of menarche age is at the age of menarche < 12 a long time, precisely 27 respondents (67.5%) with 19 respondents (47.5%) encountering essential dysmenorrhea and eight respondents (20.0%) who do not encounter essential dysmenorrhea.

The Chi-square appeared to be $P=0.037 < 0.05$, implying a critical relationship between menarche age and the rate of essential dysmenorrhea in female understudies at STIKes Muhammadiyah Cirebon in 2023.

Table 3 The Relationship Between Menstrual Duration and Primary Dysmenorrhea with Statistical Tests *Chi-Square*

Dismenore Example							
Duration of Menstruation	Ya		No		Total		P
	F	%	F	%	N	%	
<12 Years	29	72,5	3	7,5	32	80,0	Value 0,004
>12 Years	3	7,5	5	12,5	8	20,0	
Total	32	80,0	8	20,0	40	10,00	

Based on Table 3, the comes between the length of the monthly cycle and the rate of essential dysmenorrhea in STIKes Muhammadiyah Cirebon understudies in 2023, out of 40 respondents, the larger part of menstrual periods were 3-7 days, precisely 32 respondents (80.0%), 29 respondents (72.5%) encountering essential dysmenorrhea, and three respondents (7.5%).

The Chi-square showed that $P=0.004 < 0.05$, implying a noteworthy relationship between the length of the monthly cycle and the rate of essential dysmenorrhea in female understudies at STIKes Muhammadiyah Cirebon in 2023.

Table 4 The Relationship Between Body Mass File (BMI) and Essential Dysmenorrhea with the Chi-Square Factual Test

Dismenore Example							
IMT	Ya		No		Total		P
	F	%	F	%	N	%	
Normal	15	37,5	8	20,0	23	57,5	Value 0,0134
Abnormal	13	42,5	0	0	17	42,5	
Total	32	80,0	8	20,0	40	10,00	

Based on Table 4, the results between body mass index (BMI) and the incidence of primary dysmenorrhea in STIKes Muhammadiyah Cirebon students in 2023 out of 40 respondents, most of the majority of body mass index (BMI) were in the Normal category, namely 23 respondents (57.5%) with 15 respondents (37.5%) experiencing primary dysmenorrhea and eight respondents (20.0%).

The results of *Chi-square* showed that $\rho=0.013 < 0.05$ meant that there was a significant relationship between body mass index (BMI) and the incidence of primary dysmenorrhea in female students at STIKes Muhammadiyah Cirebon in 2023.

Table 4 The Relationship Between Family History and Primary Dysmenorrhea with the Chi-Square Statistical Test

Dismenore Example							
Family history	Ya		No		Total		P
	F	%	F	%	N	%	
Iya	24	60,0	1	2,5	25	62,5	Value 0,002
No	8	20,0	7	17,5	15	37,5	
Total	32	80,0	8	20,0	40	100,0	

Based on Table 5, the comes about appeared comes about between the history of dysmenorrhea within the family and the frequency of essential dysmenorrhea in STIKes Muhammadiyah Cirebon understudies in 2023 out of 40 respondents, the lion's share of whom had a family history of 25 respondents (62.5%) with 24 respondents (60.0%) encountering essential dysmenorrhea and one respondent (2.5%).

The Chi-square appeared to be $P=0.002 < 0.05$, meaning that there was a critical relationship between family history and the rate of essential dysmenorrhea in female understudies at STIKes Muhammadiyah Cirebon in 2023

Table 5. The Relationship Between Work out Propensities and Essential Dysmenorrhea with the Chi-Square Measurable Test.

Dismenore Example							
Duration of Menstruation	Ya		No		Total		P
	F	%	F	%	N	%	
<3 times a week	2	67,5	2	5,0	29	72,0	Value 0,003
>3 times a week	7						
Total	5	12,5	6	15,0	11	27,0	
	3	80,0	8	20,0	40	100,0	
	2						

Based on Table 6, the difference between workout propensities and the rate of essential dysmenorrhea in STIKes Muhammadiyah Cirebon understudies in 2023 out of 40 respondents, most of the lion's share of workout propensities appeared that in female understudies who worked out < 3 times a week, as numerous as 29 respondents (72.5%) experienced essential dysmenorrhea, 27 respondents (67.5%) and those who did not involvement two respondents (5.0%).

The Chi-square appeared to $\chi^2=0.003 < 0.05$, meaning there was a noteworthy relationship between workout propensities and the rate of essential dysmenorrhea in female understudies at STIKes Muhammadiyah Cirebon in 2023.

DISCUSSION

1. Overview of Primary Dysmenorrhea Incidence

In the investigation of female understudies at STIKes, Muhammadiyah Cirebon in 2023 appeared that out of 32 respondents with the rate of essential dysmenorrhea (80.0%). Essential dysmenorrhea is menstrual torment without variations from the norm within the genital organs. It can last a few hours and be felt sometime recently or at the same time as

the onset of the monthly cycle (Ismalia, 2017). Common side effects of dysmenorrhea incorporate torment within the lower midriff amid the monthly cycle (Hayati, 2020). Increased prostaglandin hormones cause dysmenorrhea. Increased prostaglandin hormones caused by decreased estrogen and progesterone cause the endometrium to swell and die due to unfertilization. An increase in prostaglandin hormones causes the womb's muscles to contract and produce pain (Sukarni & Wahyu, 2017). This is to the results of a study conducted at the Tasikmalaya Ministry of Health Polytechnic in 2016 on all female students of the Department, using a cross-sectional design; the results were obtained that 87.1% experienced primary dysmenorrhea and the most results were 47% female students of the Midwifery Department.

The results of this study are in line with a study conducted by Margaret and Sprint (2016) in India, which concluded that dysmenorrhea among young women is 73%. Menstrual discomfort emerges because, in youth, the regenerative organs have not worked ideally and are not prepared to alter, so discomfort emerges during the feminine cycle. The severity of the discomfort will diminish with age. This can be suspected to happen due to nerve disintegration due to maturing.

Based on an investigation conducted by Sari et al. (2015), it appeared that 80% of female understudies experienced essential dysmenorrhea. In East Java, the rate of essential dysmenorrhea is 71.3% (Ammar, 2016). This is often in line with a study conducted by Yunitasari R (2017) on pre-adult understudies of SMPN 3 Jember; there were 42 female understudies (68.9%) who experienced essential dysmenorrhea and 19 female understudies (31.1%) who did not encounter essential dysmenorrhea. Based on this portrayal, the researcher's presumption concluded that the rate of essential dysmenorrhea in STIKes Muhammadiyah Cirebon understudies was very high.

Overview of Respondent Characteristics

Regenerative well-being for a lady may be a critical component. Ladies have a regenerative framework that's exceptionally vulnerable to clutter, which can cause issues with their regenerative well-being. One issue that happens in youthful regenerative well-being amid the feminine cycle is dysmenorrhea or torment amid the feminine cycle (Sinaga, 2017).

Menarche is the first menstruation that occurs, which is a characteristic of the maturity of a healthy woman who is not pregnant (Irianto, 2015). The age at which a child

is practicing menarche varies greatly; some menarche at 12 years and some at eight years old have started the cycle (Laila, 2016). According to Irianto (2015), the average age for girls in menarche is 12-14. Early menarche has a greater risk of cancer in women. The first menstruation before the age of 12 years, the risk of breast cancer increases by 50% compared to the age of 16 years (Haryono, 2016).

Prolonged menstruation in a woman increases the production of prostaglandin hormones so that it is excessive, which eventually causes pain during menstruation. Excessive production of prostaglandins is caused by excessive contraction of the uterine muscles during menstruation (Nareza, 2020). According to Sinaga (2017), the normal term of the monthly cycle is 3-7 days, and if the blood clot appears to be dying, it is > 7 days, which is an anomalous state of the feminine cycle. At the time of the feminine cycle, ladies will involve dying from the vagina, which endures around 3-7 days; the volume of blood discharged is around 40 ml. Be that as it may, in a few cases, a few ladies drain more and for a longer time, which is more than ten days. The longer the menstrual period, the longer the uterus contracts, so that the prostaglandins delivered will be more and can inevitably cause torment. too, nonstop uterine withdrawals can cause the blood supply to the uterus to halt or diminish, which is about dysmenorrhea (Wardani, 2021).

Body mass list (BMI) may be esteem taken from the calculation of the remainder between body weight (BB) in kilograms and the square of tallness (TB) in meters. BMI is broadly utilized to decide a person's wholesome status. The results of surveys in several nations show that BMI may be a responsive record that is touchy to changes in wholesome status, regular nourishment accessibility, and work efficiency (Dhara & Chatterjee, 2015). Ladies with a low body mass file (BMI) can encounter dysmenorrhea due to destitute nourishment admissions, coming about in iron deficiency, which is one of the variables that can cause essential dysmenorrhea. In the interim, ladies who have an overweight body weight more than typical encounter essential dysmenorrhea since the more fat, the more prostaglandins are shaped. In contrast, an increment in prostaglandins in blood circulation is suspected to cause dysmenorrhea (Oktorika, 2020).

A history of dysmenorrhea within the family is one of the chance variables that can increment the probability of dysmenorrhea since it is related to hereditary variables that pass down characteristics to their descendant, one of which is self-duplication so that at the time of genetic cell division it will copy itself so that maternal characteristics can

diminish to sibling (Fatmawati & Aliyah, 2020). Dysmenorrhea is experienced by somebody who has a family history or relatives of dysmenorrhea. Two out of three ladies who endure dysmenorrhea have a history of dysmenorrhea in their family (Fatmawati & Aliyah, 2020).

Exercise is one of the unwinding procedures that can reduce dysmenorrhea. Typically, when working out, the body will create endorphins. Endorphins are created within the brain and the course of action of the spinal nerves. This hormone can work as a normal narcotic, so it causes a sense of consolation (Susianti, 2017) Sayturt Tjokronegoro, (2005), In the event that a lady frequently does sports, at that point, the woman can give oxygen nearly two times per miniature so that oxygen is conveyed to the blood vessels that experience vasoconstriction. This will cause a diminish in the frequency of dysmenorrhea by routinely working out. Ladies who exercise regularly for 30-60 minutes each 3-5 times per week can avoid dysmenorrhea. Each lady can take a lackadaisical walk, run gently, swim, do acrobatics, or ride a bike, agreeing to their condition (Manuaba, 2010). They think about accepting that the respondents' characteristics with factors were seen from menarche age, length of the monthly cycle, body mass record, family history, and workout propensities.

Variables Related to the Rate of Essential Dysmenorrhea

Menarche Age Relationship with Essential Dysmenorrhea

The investigation results at STIKes Muhammadiyah Cirebon in 2023 showed that the respondents with the most elevated age of 72 a long time at the age of menarche < 12 a long time, which was 19 respondents (47.5%). Menarche that happens prior to the average age will cause torment amid the feminine cycle. Usually, since the regenerative organs are not prepared to create, early menarche reflects a more delayed introduction to prostaglandins, which play a significant part in dysmenorrhea through uterine compressions that cause torment.

The large number of respondents with early menarche age (Is strengthened by the results of a study conducted by Rosanti (2017) on grade VIII students of SMP Negeri 1 Ungaran, with the results that there is a relationship between menarche age and dysmenorrhea ($p=0.029$).

The study results align with Sari's (2017) research, reporting a meaningful

relationship between menarche age and the incidence of dysmenorrhea with a value of $p = 0.000$. The results showed that 48 people (66.7%) aged <12 years of menarche experienced dysmenorrhea, while 24 people (33.3%) did not experience dysmenorrhea. In the menarche age group ≥ 12 years, 18 people (31.0%) experienced dysmenorrhea, while 40 people (69.9%) did not experience dysmenorrhea.

The results of this study are based on the research of Beddu et al. (2015). From 79 respondents, they obtained a p -value = 0.006, meaning that there is a meaningful relationship between the age of menarche and primary dysmenorrhea.

Similarly, the research of Anwar and Eva (2015) from 95 respondents obtained a p -value = 0.018, meaning that there is a meaningful relationship between the age of menarche and the incidence of dysmenorrhea in adolescent girls at SMA Negeri 1 Samudera, North Aceh Regency in 2015. The more prolonged menstruation occurs, the more often the uterus contracts, producing more prostaglandins. Excessive production of prostaglandins can cause severe pain during menstruation (Anwar & Eva, 2015).

This is often in line with the comes about of think about (Rosanti, 2017) on review VIII understudies of SMP Negeri 1 Ungaran, with the comes about that there is a relationship between menarche age and dysmenorrhea ($p=0.029$). At the age of 11-16 a long time, menarche is as numerous as 65.6% of those who are involved in dysmenorrhea, as much as 56.3%, usually due to diverse supplements in teenagers. A child with great dietary admissions will have a speedier menarche age, and menopause will be slower, causing torment amid the feminine cycle. Additionally, bad habits and vice versa, on the off chance that an individual has an undesirable way of life (smoking or never working out), at that point, menstrual pain will increase (Porwati & Misaroh, 2009).

The conclusion is that the age of menarche encompasses a relationship that influences the incidence of essential dysmenorrhea, which is caused since menarche happens at a prior age than usual when the regenerative organs are not prepared to alter. There is still a narrowing of the cervix; at that point, the torment will emerge amid the feminine cycle, and menarche at an early age will be at the hazard of creating breast cancer.

The Long Relationship Between Monthly Cycle and Essential Dysmenorrhea

In the investigation of female understudies at STIKes Muhammadiyah Cirebon in 2023, appeared that of the 32 respondents with a menstrual period of 3-7 days, most

experienced essential dysmenorrhea, 29 respondents (72.5%). The delayed monthly cycle that surpasses typical (more than seven days) comes about in more visit withdrawals of the uterus, and more prostaglandins are delivered, which causes torment (Eryanti, 2019).

Ladies who have dysmenorrhea have higher intrauterine weight and have twice as numerous prostaglandins within the blood amid the menstrual period; hence, in ladies with essential dysmenorrhea, unpredictable and clumsy uterine contractions that happen within the uterus will too happen more habitually. In case irregular uterine action proceeds to happen, at that point, decreased blood stream will too happen, which comes about in ischemia or uterine hypoxia, which causes torment (Ammar, 2016).

Average menstrual duration (3-7 days) while menstrual duration is more than average or hypermenorrhea is heavy menstrual bleeding and more prolonged than average, which is >7 days. The causes of hypermenorrhea are usually related to endocrine disorders and are also caused by inflammatory disorders, uterine tumors, and emotional disorders that can also affect bleeding. The length of the feminine cycle is longer than average, causing uterine compressions; if the feminine cycle happens longer, it causes the uterus to contract more frequently, and more prostaglandins are discharged. The top generation of prostaglandins causes torment, whereas ceaseless uterine withdrawals cause the blood supply to the uterus to halt, and dysmenorrhea happens (Kojo et al., 2021).

A typical menstrual period (3-7 days) can encounter essential dysmenorrhea since, based on the comes about of perceptions that have been made on STIKes Muhammadiyah Cirebon understudies, there is a relationship between menstrual length and the frequency of dysmenorrhea due to way of life changes, such as need of work out, untimely menarche age, eating non-nutritious and sporadic nourishments, other than that mental and physiological variables can too cause it. Mentally, it is ordinarily related to passionate levels, uneasiness, and push.

Mental and physiological variables can influence the length of the feminine cycle, mentally impacted by the passionate level of youthful ladies who are labile when encountering the feminine cycle. At the same time, physiologically, intemperate withdrawal of uterine muscles will increment hormone affectability so that the endothelium within the emission stage produces prostaglandin hormones. These prostaglandins are shaped due to unsaturated, greasy acids and are synthesized by all cells within the body, which causes torment amid the feminine cycle (Gustina, 2015).

This can be in line with the inquire about of Tia Martha Pundati et al. in 2016 on Factors Affecting the Rate of Dysmenorrhea, where within the VIII semester understudies at the University of Jendral Soedirman Purwokerto, $p = 0.005$ was gotten, which suggests that there's a important relationship with essential dysmenorrhea. This ponder is bolstered by an inquiry conducted by Pundati, T. (2016); there is a 78 noteworthy relationship between the length of the monthly cycle and the frequency of dysmenorrhea in understudies within the VIII semester of Jendral Soedirman College Purwokerto with a esteem of $p = 0.005$.

This investigation is reinforced by the investigation conducted by Marni et al. (2022); data was obtained utilizing the chi Square test, an esteem of p -value = 0.000 (7 days (87.2%) with a p esteem of 0.046. Hence, it was concluded that there was a relationship between the length of the feminine cycle and the rate of dysmenorrhea.

This ponder is in line with Purwanti's (2014) inquiry into Variables related to the frequency of dysmenorrhea in Lesson X understudies at SMK NU Ungaran, which appears to show a critical relationship between the length of the feminine cycle and the frequency of dysmenorrhea (p -value = 0.040).

The conclusion is that the length of the monthly cycle incorporates a relationship that affects the frequency of essential dysmenorrhea since the longer the menstrual period, the longer the uterus contracts, so the prostaglandins produced will be more, which inevitably can cause torment. Additionally, nonstop uterine compressions can cause the blood supply to the uterus to halt or diminish, resulting in dysmenorrhea.

This inquiry is reinforced by the inquiry conducted by Marni et al. (2022); data was obtained utilizing the chi Square test, an esteem of p -value = 0.000 (7 days (87.2%) with an esteem of 0.046. Hence, it was concluded that there was a relationship between the length of the feminine cycle and the frequency of dysmenorrhea.

This conclusion is in line with Purwanti's (2014) examination, Components related to the recurrence of dysmenorrhea in Lesson X understudies at SMK NU Ungaran, which shows a basic relationship between the length of the month-to-month cycle and the rate of dysmenorrhea (p -value = 0.040).

The conclusion is that the length of the ladylike cycle consolidates a relationship that influences the recurrence of basic dysmenorrhea. The longer the menstrual period, the longer the uterus contracts, so the prostaglandins made will be more and definitely can

cause torment. Furthermore, determined uterine compressions can cause the blood supply to the uterus to stop or lessen, resulting in dysmenorrhea.

The Relationship Between Body Mass List (BMI) and Essential Dysmenorrhea

The investigation of female understudies at STIKes Muhammadiyah Cirebon in 2023 showed a regular body mass record, which appeared that of the 23 respondents, most experienced dysmenorrhea, and as numerous as 15 respondents (42.5%). With anomalous BMI, as numerous as 17 respondents (42.5%) experienced essential dysmenorrhea.

Overweight can result from poor food intake. Meanwhile, overweight status can also cause dysmenorrhea because there is excessive fatty tissue, which can result in vascular hyperplasia by fatty tissue in the female reproductive organs; the blood that should flow during the menstrual process is disrupted and causes pain during menstruation. So, abnormal nutritional status has the possibility of dysmenorrhea. This can happen possibly due to other causative factors (Kusnaningsih, 2020).

According to Tjokonegoro (2004), another factor that causes dysmenorrhea in a person is insufficient nutrient intake, such as iron intake. Iron is the main component that is essential in blood formation (hemopoiesis), namely, synthesizing hemoglobin. Hemoglobin functions to bind oxygen that will be circulated throughout the body; if hemoglobin levels are reduced, then the oxygen that is bound and circulated throughout the body is only a little. As a result, oxygen cannot be channeled to the blood vessels within the regenerative organs that undergo vasoconstriction, so it will cause torment.

Another ponder found that there was a relationship between body mass record (BMI) and the rate of dysmenorrhea in pre-adult young ladies. At the age of development, pre-adult young ladies ought to be given sound and adjusted nourishment, which leads to the support of an ordinary body mass record (BMI) that makes a difference to direct the menstrual cycle (Zulfa & Lestari, 2022).

In line with the investigation of Ningsih S et al. (2023), they appeared that the understudies of the Confirmation III Maternity Care Ponder Program of STIKes Akbidyo who had a lean BMI generally experienced dysmenorrhea, precisely 18 individuals (40%). Most of the understudies who had an average BMI did not encounter dysmenorrhea, to be specific 15 individuals (33.3%). One hefty understudy had dysmenorrhea, and one other individual did not have dysmenorrhea. it appears that the p-value is 0.001. This implies that $0.001 < 0.05$ since the p-value is smaller than 0.05, so there is a relationship between

Body Mass Record (BMI) and the rate of dysmenorrhea in understudies of the Recognition III Maternity Care Ponder Program STIKes Akbidyo Yogyakarta.

The inquiry was fortified by the investigation of Ainun Z et al. (2017) on understudies of SMA Negeri 21 Makassar, appearing the comes about of the investigation utilizing the chi-square test and getting a noteworthiness esteem of P of 0.000 (< 0.05). It can be concluded that there is a relationship between body mass list and the degree of menstrual torment (dysmenorrhea).

Furthermore, this result is additionally in line with the comes about of the ponder (Kurniati et al., 2019) at SMAN 15 Padang; to be specific, there is a relationship between BMI and the rate of dysmenorrhea with a Chi-Square test with a p-value = 0.009.

The results of this ponder are supported by the investigation of Kusniawati (2018), which found a relationship between body mass index and the rate of dysmenorrhea in female understudies in 2015, Staff of Medication, Baiturrahmah College $\rho = 0.009$ and the esteem of the relationship coefficient = 0.353.

The conclusion is that body mass file influences the frequency of essential dysmenorrhea since ladies with an irregular body mass record (BMI) can be involved in dysmenorrhea due to destitute nourishment admissions, as well as over-the-top fat utilization is one of the variables that can cause essential dysmenorrhea.

Relationship of Family History with Essential Dyseboreia Rate

The comes about of the think about of female understudies at STIKes Muhammadiyah Cirebon in 2023 appeared that of the 25 respondents with a history of dysmenorrhea in families, more than half of them experienced dysmenorrhea as numerous as 24 respondents (60.0%). They are usually related since a person's anatomical and physiological conditions are nearly identical to those of his guardians and kin. In addition to these variables, Maryam (2016) said that the family history of experiencing dysmenorrhea is one of the foremost critical components influencing essential dysmenorrhea.

Mouliza Inquire about (2019). Puterida (2020) and Horman et al. (2021) expressed that ladies with a history of dysmenorrhea in their family have a more noteworthy predominance of essential dysmenorrhea. A few analysts gauge that children of moms who have menstrual issues involve repulsive periods, which may be a reason that can be connected to the behavior learned from the mother. Family history may be a hazard figure

for essential dysmenorrhea, which may be related to endometriosis.

A family history with the frequency of essential dysmenorrhea is one of the variables that can influence the event of dysmenorrhea since there is a hereditary relationship between the mother and her child that cannot be changed so that when the mother includes a history of dysmenorrhea, young ladies will moreover have an awesome chance to involvement the same thing (Hidayanti, 2020).

The results of this ponder are reinforced by the inquiry conducted by Ade, Sarwinarti, and Purwati (2019), which states that respondents who have a family history of essential dysmenorrhea have more gentle dysmenorrhea, namely 34 respondents (45.9%), compared to other categories. This states that there is a significant relationship between family history and the frequency of essential dysmenorrhea with the result (χ^2 -value = 0.000).

This is in line with the research conducted by Fadillah (2021). This factual test shows a relationship between family history and the rate of dysmenorrhea ($p = 0.000$) and ($OR=5.364$) with the frequency of essential dysmenorrhea. The part of the family that gives instruction or information related to the feminine cycle as a preventive exertion against essential dysmenorrhea can minimize or anticipate the frequency of essential dysmenorrhea in ladies.

The comes about of ponder appeared that there was a noteworthy relationship between family history and the frequency of dysmenorrhea; a study conducted by Ayuk Andriani (2018), in FKM UNAIR understudies from the comes about of the chi-square test showed that there was a relationship between family history ($p = 0.015$, Phi coefficient = 0.301 and $RP85 = 1.447$ 95% CI: 1.081-1.9) and the event of essential dysmenorrhea.

This is often in line with analysts Ery Fatmawati and Annisa Hikmatul Aliyah (2020), titled The Relationship between Mararche and Family History with Dysmenorrhea (Menstrual Torment). Within the FKM UNAIR understudies, the chi-square test appears to show a relationship between family history ($p=0.015$, Phi coefficient) and the event of essential dysmenorrhea.

The conclusion is that family history can influence the incidence of essential dysmenorrhea; dysmenorrhea is primarily experienced by somebody who incorporates a family history or relatives of dysmenorrhea. Two out of three ladies who endure from

dysmenorrhea have a family history of dysmenorrhea caused by hereditary variables.

The Relationship Between Exercise Habits and Primary Disemorea Incidence

The research of female students at STIKes Muhammadiyah Cirebon in 2023 showed that of the 29 respondents with the habit of exercising < 3 times a week and those who experienced primary dysmenorrhea, as many as 27 respondents (67.5%). Lack of activity and exercise during menstruation causes circulation and oxygen in the uterine pad to decrease and cause pain. This can increase the incidence of primary dysmenorrhea.

The Relationship Between Workout Propensities and Essential Disemorea Frequency. Workout propensities are body developments by body muscles and supporting frameworks that require vitality consumption (Ulchusna et al., 2020). This can be because when working out, the body produces endorphin hormones from the brain and spinal line. The frequency of dysmenorrhea will increase in ladies who do less workout, so when ladies encounter dysmenorrhea, oxygen cannot be channeled to the blood vessels of the regenerative organs at that time of vasoconstriction. If a lady routinely works out, at that point, the lady can give nearly twice the oxygen per diminutive so that oxygen is conveyed to the blood vessels that have contracted blood vessels, which can diminish the frequency of dysmenorrhea by frequently working out (Susianti, 2018). They are bolstered by the investigation of Siti Rosalia et al. (2022) at State Tall School in the Glenmore Area, where the Chi-Square test appears and comes about of the Sig. (2-sided) $p = 0.049$.

Research Limitations

Based on the coordinated involvement of analysts in this inquiry about preparation, there are a few restrictions experienced, and there can be a few variables that can be paid more consideration to future analysts in assist idealizing their investigation since this investigation itself certainly has inadequacies that have to be corrected in future investigate. A few of the confinements within the consider incorporate:

1. The time required to conduct the investigation is restricted, so this inquiry could be better.
2. Respondents' constrained plans and the thickness of planned courses in each course marginally hampered the inquiry about handle.
3. This inquiry is distant from the culmination, so the taking after the inquiry is anticipated to be superior.

CONCLUSION

From the comes about of the investigated Components related to the rate of essential dysmenorrhea at STIKes Muhammadiyah Cirebon in 2023, it can be concluded as follows:

1. The more significant part of STIKes Muhammadiyah Cirebon understudies in 2023 experienced essential dysmenorrhea.
2. Most STIKes Muhammadiyah Cirebon understudies in 2023 encounter a menarche age of < 12 a long time, menstrual term of 3-7 days (Ordinary), average body mass list, family history, and the propensity of working out < 3 times a week.
3. There is a relationship between menarche age variables, menstrual period, body mass list, family history, and workout propensities with the frequency of essential dysmenorrhea in female understudies.

Suggestion

The suggestions in this study, based on the results of the study, are:

- a. For STIKes Muhammadiyah Cirebon

The results of this research are expected to provide scientific information and add references about dysmenorrhea, which can be one of the topics for the student counseling program at STIKes Muhammadiyah Cirebon.

- b. For Other Researchers

The results of this study are expected to be used as a basis for further research, and it is hoped that future researchers can develop this research by adding other primary dysmenorrhea factors.

BIBLIOGRAPHY

- Anwar, C., & Rosdiana, E. (2019). The Relationship between Menarche Body Age and Age Index and the Incidence of Dysmenorrhea in Adolescent Girls at SMA Negeri 1 Samudera in 2015. *Journal of Healthcare Technology and Medicine*, 2(2), 144–153.
- Fajriani, D. (2018). Learning achievement in adolescents with primary dysmenorrhea. *Journal of Reproductive Health*, 5(1).
- Hamzah, R., & B, H. (2021). Factors related to the occurrence of dysmenorrhea in SMAN 1 students. *Journal of Public Health*, 5(2), 804–813.
- Handayani, E. Y., & Rahayu, L. S. (2014). Factors Related to Menstrual Pain (Dysmenorrhea) in Adolescent Girls in Several High Schools in Rokan Hulu Regency. *Journal of Martenity and Neonatal*, 1(4), 161–171.
- Harjatmo, Priyo, T., Par'i, H. M., & Wiyono, S. (2017). *Assessment of nutritional status*. Jakarta: Center for Human Health Source Education. Ministry of Health of the

- Republic of Indonesia.
- Hayati, S., Agustin, S., & Maidartati. (2020). Factors Related to Dysmenorrhea in Adolescents at Banjaran Youth High School, Bandung. *Bsi Journal of Nursing*, 8(1), 132–142.
- Mulyani, N., Sudaryanti, L., & Dwiningsih, S. R. (2022). The relationship between menarche age and menstrual length and the incidence of primary dysmenorrhea. *Journal of Health, Education and Literacy*, 4(2), 104–110.
- Robert, B., & Brown, E. B. (2004). The relationship between body mass index and the incidence of primary dysmenorrhea in adolescents. *Journal of Health*, 1, 1–14.
- Tiara Mayang Sari, Suprida, Rizki Amalia, S. Y. (2022). Factors related to dysmenorrhea in adolescent girls at Man 1 Ogan Komering Ulu in 2021. *UMC Journal of Health Sciences*, 11(1), 42.
- Kojo, N. H., Kaunang, T. M. D., & Rattu, A. J. M. (2021). The Relationship of Factors That Played a Role in the Occurrence of Dysmenorrhea in Adolescent Women in the New Normal Era. *E-CliniC*, 9(2), 429. <https://doi.org/10.35790/ecl.v9i2.34433>
- Kumalasari, I. (2014). *Reproductive Health*. Jakarta: Salemba Medika.
- Lubis, P. Y. 2019. Factors related to the incidence of primary dysmenorrhea in adolescent students of Dharma Sakti Medan High School in 2018. <https://doi.org/10.32534/jik%20umc.v11i1.3026>
- Manorek, Riyane, Rudolf B. Purba, and Nancy Malonda. (2014). "The Relationship Between Nutritional Status and the Incidence of Dysmenorrhea in Grade XI Students of SMA Negeri 1 Kawangkoan." Sam Ratulangi University.
- Momma, R. N. (2021). Comparisons of the Prevalence, Severity, and Risk Factors of Dysmenorrhea between Japanese Female Athletes and Non-Athletes in Universities. *International Journal of Environmental Research and Public Health*, 19(1), 52.
- Noviania, N. (2018). *Reproductive Health for Midwifery Students*. Jakarta: Trans Info Medika.
- Proverawati, A. d. (2009). *Menarche of the first full menstruation*. Yogyakarta: Nuha Medika.
- Sadiman, S. (2017). Analysis of Factors Associated with the Incidence of Dysmenorhea. *Journal of Health*, 8(1), 41–49.
- Setiani, I., & Setyawati, V. A. V. (2016). Factors related to the incidence of primary dysmenorrhea in female students of Dian Nuswantoro University Semarang. *Public Health*, 15(1).
- Sulistiyorini S, M. S. (2017). Factors that affect the incidence of primary dysmenorrhea. *Med Mask*, 223-31.
- Syafriani. (2021). The Relationship between Nutritional Status and Menarche Age and the Incidence of Dysmenorrhea in Adolescent Girls at SMAN 2 Bangkinang Kota 2020. *Journal of Nurses*, 5(1), 32–37.
- Triwahyuningsih, R. Y. (2021). Knowledge Factors of Adolescent Girls on Handling Pain During Dysmenorrhea. *Journal of Legality*, 45-52.
- Wulandari, P., Retnaningsih, D., & Winarti, R. Factors related to the incidence of dysmenorrhea in adolescent girls in the Stikes Widya Husada Nurse Study Program, Semarang. In *Proceedings of the National Seminar Widya Husada*. Semarang; 2019.
- Anwar, C., & Rosdiana, E. (2019). The Relationship between Menarche Body Age and Age Index and the Incidence of Dysmenorrhea in Adolescent Girls at SMA Negeri 1 Samudera in 2015. *Journal of Healthcare Technology and Medicine*, 2(2), 144–153.
- Syafriani. (2021). The Relationship between Nutritional Status and Menarche Age and the

- Incidence of Dysmenorrhea in Adolescent Girls at SMAN 2 Bangkinang Kota 2020. *Journal of Nurses*, 5(1), 32–37.
- Handayani, E. Y., & Rahayu, L. S. (2014). Factors Related to Menstrual Pain (Dysmenorrhea) in Adolescent Girls in Several High Schools in Rokan Hulu Regency. *Journal of Marternity and Neonatal*, 1(4), 161–171.
- Sadiman, S. (2017). Analysis of Factors Associated with the Incidence of Dysmenorrhea. *Journal of Health*, 8(1), 41–49.
- Hayati, S., & Agustin, S. (2020). Factors related to dysmenorrhea in adolescents at Banjaran Youth High School Bandung. *BSI Journal of Nursing*, 8(1), 132–142.
- Lubis, P. Y. 2019. Factors related to the incidence of primary dysmenorrhea in adolescent students of Dharma Sakti Medan High School in 2018.
- Kojo, N. H., Kaunang, T. M. D., & Rattu, A. J. M. (2021). The Relationship of Factors That Played a Role in the Occurrence of Dysmenorrhea in Adolescent Women in the New Normal Era. *E-CliniC*, 9(2), 429. <https://doi.org/10.35790/ecl.v9i2.34433>
- Harjatmo, Titus Priyo, Holil M. Par'i, and Sugeng Wiyono. (2017). *Assessment of Nutritional Status*. Jakarta: Center for Human Health Source Education. Ministry of Health of the Republic of Indonesia.
- Manorek, Riyane, Rudolf B. Purba, and Nancy Malonda. (2014). "The Relationship Between Nutritional Status and the Incidence of Dysmenorrhea in Grade XI Students of SMA Negeri 1 Kawangkoan." Sam Ratulangi University.
- Kumalasari, I. (2014). *Reproductive Health*. Jakarta: Salemba Medika.
- Wulandari, P., Retnaningsih, D., & Winarti, R. Factors related to the incidence of dysmenorrhea in adolescent girls in the Stikes Widya Husada Nurse Study Program, Semarang. In *Proceedings of the National Seminar Widya Husada*. Semarang; 2019.

