e-ISSN 2745-7818
Oral Presentation
THE 1ST SYEDZA SAINTIKA INTERNATIONAL CONFERENCE ON NURSING, MIDWIFERY, MEDICAL LABORATORY TECHNOLOGY, PUBLIC HEALTH, AND HEALTH INFORMATION MANAGEMENT (SeSICNiMPH)

FACTORS RELATED TO DYSMENORRHEA INCIDENCE AMONG ADOLESCENT GIRLS CLASS XI AT PUBLIC VOCATIONAL HIGH SCHOOL 2 PADANG IN 2019

Oktariyani Dasril[1*], Wiya Elsa Fitri[2]
[1] Public Health Study Program Syedza Saintika Institute of Health Science Padang

*Corresponding author. Email: yanidasril05@gmail.com

ABSTRACT

The dysmenorrhea incident in the world is very large, namely that on average more than 50% of women in every country experience menstrual pain. The dysmenorrhea incident in Indonesia is 64.25% and menstrual incidence pain in West Sumatra (2013) is 57.3%. Adolescent girls at Public Vocational High School 2 Padang, said they often experience dysmenorrhea. As a result of dysmenorrhea, adolescent girls often do not attend school. The purpose of this study was to find the factors associated with dysmenorrhea incidence in grade XI adolescent at Public Vocational High School 2 Padang in 2019. This type of analytic study was a cross-sectional design. The population of the entire grade XI student at Public Vocational High Schools 2 Padang 224 people with 69 samples. Data collection using a questionnaire using interviews. Proportional random sampling technique. The study conducted from February to September 2019. Collecting data on 02-06 September 2019. Data analyzed univariate and bivariate using computerization. The results showed that less than half (42%) of adolescent experienced dysmenorrhea. Less than half (44.9%) of adolescent have menarche age quickly. Less than half (47.8%) had a family history. Less than half (27.5%) are overweight. And there was a significant relationship between menarche age (p = 0.003), family history (p = 0.001), and obesity (p = 0.005) with the dysmenorrhea incident in adolescent girls at Public Vocational High School 2 Padang. It hoped that the school will give early education or information as well as counseling about reproductive health, especially about dysmenorrhea through Junior Red Cross and School Health Unit by providing more optimization of leaflets, posters, and pamphlets.

Keywords: Menarche Age, Family History, Obesity, Dysmenorrhea Incidence

INTRODUCTION

Adolescence is a transitional period from childhood to adulthood which includes biological, psychological and social changes. The World Health Organization (WHO) in 2012 determined the age of adolescent between 12-24 years. In adolescent there are biological changes such as primary changes, namely puberty. At this puberty, all female reproductive organs grow, wherein the woman's uterus begins to mature with a sign of the arrival of her first menstruation (Kusmiran, 2013).

For adolescent, reproductive health is very important where healthy conditions related to the immune system, the reproductive function processes possessed by adolescent. The definition of being healthy here does not only mean being free from disabilities but also mentally and socially healthy (Marmi, 2014). In general, our reproductive system undergoes significant changes, namely in menstrual disorders both after and before menstruation, including dysmenorrhea, amenorrhea, and hypermenorrhea (Prawirohardjo, 2010).

Pain during menstruation can occur due to muscle problems around the hip cavity. Disorders of this muscle can also cause spasms, muscle tension, and back pain. In addition to pain, the problem occurs due to these muscles, namely the menstrual cycle is not smooth

(Haryono, 2016). Adolescent girls who experience menstrual pain disorders are very disturbing in the teaching and learning process. This makes it difficult for adolescent girls to concentrate because of the discomfort they feel when menstruating pain. Therefore, in adolescence, dysmenorrhea must be handled so that there is no worse impact (Nirwana, 2011).

The dysmenorrhea incident in the world is very large, on average 50% of women in every country experience dysmenorrhea (Anugoro, 2011). Research by Dafietni (2012) in Sweden, 80% of adolescent aged 19 years - 21 years have dysmenorrhea, 15% limit their daily activities during menstruation, and need drugs to reduce dysmenorrhea, 8-10% do not attend or attend school (Desfietni, 2012).

The dysmenorrhea incident in Indonesia is 64.25% consisting of 54.89% primary dysmenorrhea and 9.36% secondary dysmenorrhea. Primary dysmenorrhea is experienced by 60-75% of adolescent, with three-quarters of these adolescent experiencing mild to severe pain and another quarter experiencing severe pain (Alatas, 2016).

The study of dysmenorrhea prevalence was conducted by students from 1,539 respondents from 6 programs of medicine, nursing, nutrition, dentistry, pharmacy, and psychology, 64% of whom had dysmenorrhea with an average menarche age 12.3 years. Meanwhile, an epidemiological study in Egypt found that 76.1% had dysmenorrhea at different levels (Utami, 2012).

Menstrual pain incidence in West Sumatra (2013) reached 57.3%. Of those who complained of pain 9% severe, 39% moderate, and 52% mild. This incident caused 12% of adolescent to frequently miss school (Profile of the West Sumatra Health Office, 2013). This is not much different from The Research on the Relationship Between Dysmenorrhea and The Learning Achievement of Female Adolescent in Grade X and XI at Senior High School Pembangunan Padang, it was found that 80.3% of respondents experienced dysmenorrhea and 71.9% did not achieve. (Kurniati, 2011). Saflina (2013) found 62.1% of respondents experienced dysmenorrhea and 43.9% did not perform well in grade XI adolescent at Public Senior High School 5 Padang. Public Vocational High School 2 Padang is a vocational school that is in demand by teenagers. Based on data from the Padang City Education Office, this Vocational High School has the highest number of female students from other Vocational High Schools.

A predecessor survey conducted by researchers on May 21, 2019, of 10 adolescent girls at Public Vocational High School 2 Padang, 7 said they often had dysmenorrhea, 3 people said menarche was not normal, 1 person was overweight and 3 people said their family often had dysmenorrhea. Based on the above phenomenon, the researchers examined the factors associated with dysmenorrhea incidence in adolescent girls at Public Vocational High School 2 Padang in 2019.

MATERIAL AND METHODS

This study is a quantitative analytic study with a cross-sectional research design where data collection for both the causal variable (independent variable) and the effect variable (dependent variable) is carried out simultaneously at the same time. This research has been conducted at Public Vocational High School 2 Padang. The research period was from February to September 2019. The population in this study was all 224 grade XI students at Public Vocational High School 2 Padang. The sampling technique used a proportional random sampling technique using univariate and bivariate analysis data analysis.

RESULTS

a. Univariate Analysis

Table 1. Univariate Result Frequency Distribution

No	Variable	*f*	%
	Dysmenorrhea Incident		
1	Dysmenorrhea	29	42,0
2	No Dysmenorrhea	40	58,0
	Total	**69**	**100**
	Menache Age		
1	Fast	31	44,9
2	Normal	32	46,4
3	Low	6	8,7
	Total	**69**	**100**
	Family History		
1	Yes	33	47,8
2	No	36	52,2
	Total	**69**	**100**
	Obesity		
1	Fat	19	27,5
2	Normal	36	52,2
3	Less	14	20,3
	Total	**69**	**100**

According to table 1, we can see that from 69 respondents obtained 29 respondents (42%) adolescent experiencing dysmenorrhea incident at Public Vocational High School 2 Padang in 2019. As of 69 respondents obtained 31 respondents (44.9%) adolescent have fast menarche age, judging from history family found 33 respondents (47.8%) had a family history. Meanwhile, of the 69 respondents, 19 respondents (27.5%) had a fat body at Public Vocational High School 2 Padang in 2019.

b. Bivariate Analysis

Relationship Between Menarche Age and Dysmenorrhea

The results obtained from this study were that of 31 respondents who had a fast menarche age, 20 respondents (64.5%) had dysmenorrhea and 11 respondents (35.5%) had no dysmenorrhea. The statistical test obtained p-value = 0.003 (p-value <0.05%) which means that Ha is accepted and H0 is rejected, it can be concluded that there is a significant relationship between menarche age and dysmenorrhea incident at Public Vocational High School 2 Padang in 2019.

Relationship Between Family History and Dysmenorrhea

Of the 33 respondents who had a family history there were 21 respondents (63.6%) had dysmenorrhea and 12 respondents (36.4%) had no dysmenorrhea. From the statistical test, it was found that the p-value = 0.001 (p-value <0.05), which means that Ha is accepted and H0 is rejected, it can be concluded that there is a significant relationship between family history and dysmenorrhea incident at Public Vocational High School 2 Padang in 2019.

Relationship Between Obesity and Dysmenorrhea

The results obtained from this study were from 19 respondents who had overweight there were 14 respondents (73.7%) who experienced more dysmenorrhea and 5 respondents (26.3%) did not experience dysmenorrhea. From the statistical test, it was found that the p-value = 0.005 (p-value <0.05), which means that Ha is accepted and H0 is rejected, it can be concluded that there is a significant relationship between obesity and dysmenorrhea the incident at SMKN 2 Padang in 2019.

DISCUSSION

Dysmenorrhea Incident

The results of this study are the same as the research conducted by Utami (2016) about factors related to dysmenorrhea incident in female adolescent at Public Senior High School 1 Kahu, Bone Regency. The results were found to suffer from dysmenorrhea in 47.1%. Dysmenorrhea is painful menstruation that occurs without signs of hip infection or disease. Dysmenorrhea usually results from the excessive release of a certain prostaglandin, prostaglandin F2 alpha from the uterine endometrial cells. This affects uterine hypoxia which normally occurs during menstruation, resulting in intense pain (Syntia, 2012).

For most women, nonsteroidal anti-inflammatory drugs (NSAIDs) that inhibit the formation of prostaglandins, for example, ibuprofen can effectively reduce cramps, acetaminophen is less helpful because they work in a different mechanism than previous anti-inflammatory drugs. Prostaglandin inhibitors should be used at the first sign of pain or at the first sign of menstrual bleeding. Because cramps due to strong menstruation from the uterus can cause endometriosis (growth of uterine tissue outside the uterus causing pain), complaints of dysmenorrhea should always be taken seriously and efforts should be made to reduce its incidence (Elizabeth, 2007).

The researchers' assumption that dysmenorrhea incident in adolescent girls found in the field was that dysmenorrhea incident was due to the fast menarche age as much as 46.4%. Family history also influences dysmenorrhea where in this study it was found that 47.8% of families had dysmenorrhea. Genetic factors can affect the situation so that if there is a family who has dysmenorrhea it tends to affect psychologically.

Menarche Age

The results of this study are the same as research conducted by Gustina (2016) about the relationship between the age of menarche and the length of menstruation with the incidence of primary dysmenorrhea in adolescent girls at Public Vocational High School 4 Surakarta. It was found that 47.3% of menarche ages were fast. The results of this study are the same as research conducted by Utami (2016) about factors related to the dysmenorrhea incident in female adolescent at Public Senior High School 1 Kahu, Bone Regency. It was found that the age of menarche was not normal is 48.7%.

Menarche is the first menstruation that usually occurs in the age range of 10-16 years or early adolescence in the middle of puberty before entering the reproductive period (Proverawati, 2010). Menarche occurs before the age of <11 years, this condition is caused by body growth that is faster than usual so that the closure of the epiphyses line on the ribs is also faster. Causes the pituitary to produce gonadotropin hormones to be produced prematurely, causing menarche.

Researchers' assumptions on the dysmenorrhea incident in adolescent girls based on what was found in the field that dysmenorrhea incident caused by the menarche age was fast as much as 46.4%. Premature menarche age (<12 years) where the reproductive organs have not developed to the fullest and still narrowing of the cervix, then there will be pain during menstruation.

Family History

The results of this study are almost the same as Utami's (2016) study of factors related to dysmenorrhea incident in adolescent girls at Public Senior High School 1 Kahu, Bone Regency, it was found that they had a family history of dysmenorrhea (48.5%). The results of this study are the same as research conducted by Pundati (2016) about the factors related to dysmenorrhea incident in eighth-semester students of Jenderal Soedirman University in Purwokerto. It was found that the results of family history were not good (28.2%).

According to Wiknjosastro (2012) family history and genetic related to the occurrence of severe primary dysmenorrhea. Family history is a risk factor that can increase the likelihood of dysmenorrhea. The results showed that there was a relationship between family history and dysmenorrhea incident. This is due to genetic factors that can affect the respondent's condition so that if there is a respondent's family who experiences

dysmenorrhea, it tends to affect the respondent's psychology.

Researchers assume family history is a risk factor that can increase the likelihood of dysmenorrhea. The results showed that there was a relationship between family history and dysmenorrhea incident. Most of the respondents who experienced dysmenorrhea and had a positive family history. This is due to genetic factors that can affect the respondent's condition so that if there is a respondent's family who experiences dysmenorrhea, it tends to affect the respondent's psychology.

Obesity

The results of this study are the same as those of Utami (2016) about the factors related to dysmenorrhea incident in adolescent girls at Public Senior High School 1 Kahu, Bone Regency. It was found that the results were 40% overweight. The results of this study are the same as the research of Salamae (2019) about the factors related to the incidence of primary dysmenorrhea in the Al-Imdad Yogyakarta Islamic boarding school, found (12.2%).

One of the things that affect dysmenorrhea is abnormal nutritional status. One complaint that causes female students absent from school every month is due to spasms or cramps in the lower abdomen and back that occur during menstruation. In studies conducted by experts, nutritional status is usually measured by calculating the body mass index (BMI). In BMI calculation using anthropometric measurements, which measure the height and body weight (BW) and then calculate the body mass index (BMI) (Supariasa, 2012).

Researchers assume that obesity that occurs in adolescent girls can be due to heredity and hormones with large portions of food. Nutritional status can influence the dysmenorrhea incident because people with more than normal nutritional status show an increase in excess prostaglandin levels, which triggers myometrial spasms which are triggered by substances in menstrual blood, similar to natural fats that can be found in uterine muscles.

Bivariate Analysis

Relationship Between Menarche Age and Dysmenorrhea

The results of this study are almost the same as the research conducted by Utami (2016) about factors related to the dysmenorrhea incident in female adolescent at Public Senior High School 1 Kahu, Bone Regency. It was found that there was a relationship between the age of menarche and dysmenorrhea incident.

Menarche age that is too early <12 years has a short-term effect, namely dysmenorrhea incident, while long-term effects can trigger cervical cancer, breast cancer, and myoma (Proverawati, 2009). The assumption of researchers that there is a relationship between the age of menarche and dysmenorrhea incident in this study can be seen that the age of menarche is more likely to experience dysmenorrhea. This is because stimuli from outside the environment are very strong, for example in the form of sex films (blue films), books, magazines, and portraits of pornography or immoral acts, male seduction and stimulation, direct observation of coitus' actions, all of them. not only leads to an increase in sexual reactions but also results in an acceleration of the sexual maturity of girls.

Relationship Between Family History and Dysmenorrhea

The results of this study are the same as research conducted by Pundati (2016) about the factors associated with dysmenorrhea incident in eighth-semester students of Jenderal Soedirman University in Purwokerto. It was found that there was a relationship between family history and dysmenorrhea incident.

Family history is a risk factor that can increase the likelihood of dysmenorrhea. Genetic factors can affect the situation so that if there is a family who has dysmenorrhea it tends to affect psychologically (Utami, 2016). The assumption of researchers that there is a relationship between family history and dysmenorrhea incident can be seen that families who have a history of dysmenorrhea will decrease in their daughters who will also experience dysmenorrhea.

Relationship Between Obesity and Dysmenorrhea

The results of this study are the same as the research of Salamae (2019) about the factors associated with primary dysmenorrhea incident at the Al-Imdad Yogyakarta Islamic boarding school. It was found that there was a relationship between obesity and dysmenorrhea incident. The results of this study are almost the same as the research conducted by Utami (2016) about factors related to the dysmenorrhea incident in adolescent girls at Public Senior High School 1 Kahu, Bone Regency. It was found that there was a relationship between obesity and dysmenorrhea incident.

Nutritional status is a state of balance in the body which is the final result of the balance between food consumption and the use of nutrients in the body (Supariasal, 2012). Nutritional status is important for human health and can affect the function of organs, one of which is the reproductive function. Adolescent girls need to keep up a good nutritional status by eating a balanced diet. Good nutritional intake will affect the formation of hormones involved in menstruation, namely FSH (Follicle-Stimulating Hormone, LH (Luteinizing Hormone), estrogen, and progesterone. The hormones FSH, LH, and estrogen together will be involved in the menstrual cycle, while the hormone progesterone affects the uterus, which can reduce contractions during the menstrual cycle (Kuswandi, 2013).

The assumption of researchers that there is a relationship between obesity and dysmenorrhea incidents can be seen that overweight has more dysmenorrhea and does not experience dysmenorrhea. This is because family medical history greatly influences the health condition of family members and is a risk factor that strongly supports the occurrence of a similar disease in the family environment. It is hoped that the school will give early education or information as well as counseling about reproductive health, especially about dysmenorrhea through the Junior Red Cross and School Health Unit with more optimization to give leaflets, posters, and pamphlets.

CONCLUSION

Based on the results of the research and discussion that has been stated, it can be concluded that 42% of adolescent girls experience dysmenorrhea, 44.9% of adolescent girls experience menarche in the fast category, have a family history of 47.8% and 27.5% of adolescent girls experience obesity. And there is a significant relationship between the menarche age (p = 0.003), family history (p = 0.001), and obesity (p = 0.005) with the dysmenorrhea incident in adolescent girls at Public Vocational High School 2 Padang. It is recommended that schools offer education or information at schools early on reproductive health, especially about dysmenorrhea through the Junior Red Cross and School Health Unit by providing more optimized leaflets, posters, and more.

REFERENCES

Anurogo, 2011. *The Right Way to Overcome Menstrual Pain.* Yogyakrta : ANDI

Alatas, 2016. *Primary Dysmenorrhea and Primary Dysmenorrhea Risk Factors in Adolescents. Majority 5(3): 79-84*

Desfietni, 2012. *Relationship Between Individual Characteristics, Individual Activities, and Consumption of Milk Products with Primary Dysmenorrhea in the Faculty of Nursing and School of Public Health, University of Indonesia. h. 45, 95-96*

Gustina, 2016. *The Relationship Between Menarche Age and Length of Menstruation with the Primary Dysmenorrhea Incident in Adolescent Girls at Public Vocational High School 4 Surakarta, Journal*

Haryono, 2016. *Facing Ready Menstruation and Menopause,* Jakarta : Gosyen

Kusmiran, Erni. 2011. *Reproductive Health for Adolescents and Women.* Jakarta : PT. Salemba Medika

Kuswandi, 2013. *Relationship Between Menarche Age and Nutritional Status of Grade 2 Junior High School Students with the Dysmenorrhea Incident.* Journal of Scientia Obstretics Vol.2 No.21SSN 2337-6120, h. 196

Manuaba, 2010. *Obstetrics, Gynecology and Family Planning, Jakarta : EGC*

Notoatmodjo, 2012. *Health Research Methodology.* Jakarta : Rineka Cipta

Nursalam, 2011. *Concept and Application of Nursing Research Methodology.* Jakarta : Salemba Medika

Perry & Potter, 2005. *Fundamental Nursing Concepts, Processes, and Practice,* Jakarta : EGC

Proverawati, 2009. *Menarche : Meaningful First Menstruation,* Yogyakrta : Nuha Medika

Puji, 2014. *Effective Dysmenorrhea Exercise in Reducing Dysmenorrhea in Adolescent Girls at Public Senior High School Semarang*. Thesis Journal

Pundati, 2016. *Factors Associated with the Dysmenorrhea Incident in Semester VIII Students of Jenderal Soedirman University Purwokerto.* Thesis Journal

Ridwan, 2011. *The Effect of Distraction Techniques (listening to music) on the Decrease in Pain During Menstruation Day-1 in Adabiah Padang High School Students*

Salamae, 2019. *Factors Related with the Primary Dysmenorrhea Incident in Al-Imdad Islamic Boarding School, Yogyakarta*, Thesis Journal

Sarwono, 2016. *Adolescent Psychology*, Jakarta : Raja Grafindo Pustaka

Setiadi, 2013. *Nursing Research Concepts and Writing*, Yogyakarta, Graha Ilmu

Syntia, 2012. *Reproductive Biology*, Yogyakarta : Pustaka Rihama

Tamsuri A, 2006. *Concepts and Management of Pain*, Jakarta : EGC

Utami, 2016. *Factors Related with the Dysmenorrhea Incident in Adolescents in at Public Senior High School 1 Kahu, Bone Regency*, Journal