ASSOCIATION OF DYSMENORRHEA AND QUALITY OF LIFE IN FEMALE STUNDENTS AT XAVERIUS I SENIOR HIGH SCHOOL PALEMBANG ACADEMIC YEAR 2018-2019

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Abstrak

Dismenore, gangguan menstruasi yang paling sering terjadi pada remaja, dapat menimbulkan rasa tidak nyaman dan mengganggu aktifitas sehari-hari. Hal ini dapat menyebabkan menurunnya kualitas hidap siswi. Penelitian ini bertujuan untuk mengetahui hubungan antara dismenore dan kualitas hidup siswi SMA Xaverius 1 Palembang Tahun Ajaran 2018-2019.Penelitian yang digunakan adalah penelitian observasional analitik dengan desain potong lintang yang dilakukan pada bulan Juli-Desember 2018. Populasi penelitian ini adalah seluruh siswi SMA Xaverius 1 Palembang Tahun Ajaran 2018-2019. Dengan total sampling didapat jumlah sampel sebanyak 423 siswi. Data didapatkan menggunakan kuesioner. Data yang diperoleh dianalisis dengan uji *Chi-Square*. Siswi berkisar antara 14-18 tahun. Prevalensi siswi yang menderita dismenore 67,5%. Proporsi siswi nyeri ringan 28,7%, nyeri sedang 60,5%, dan nyeri berat 10,8%. Dari 423 siswi, 54,3% fungsi fisik buruk, 68,1% fungsi emosional buruk, 29,6% fungsi sosial buruk, 74,5% fungsi sekolah buruk dan 37,6% kualitas hidup siswi buruk. Hasil uji statistik menunjukkan terdapat hubungan antara dismenore dan kualitas hidup, fungsi fisik, fungsi emosional dan fungsi sekolah ($p < 0,05$). Tidak terdapat hubungan antara dismenore dan fungsi sosial ($p > 0,05$). Terdapat hubungan antara derajat nyeri dismenore dan kualitas hidup, fungsi fisik, fungsi emosional, fungsi sosial, dan fungsi sekolah ($p < 0,05$). Terdadapat hubungan antara dismenore dan kualitas hidup siswi SMA Xaverius 1 Palembang Tahun Ajaran 2018-2019.

Kata kunci: *dismenore, kualitas hidup, Pedsql*

Abstract

Association of Dysmenorrhea and Quality of Life in Female Students at Xaverius 1 Senior High School Palembang Academic Year 2018-2019. *Dysmenorrhea, a menstrual disorder that most often occurs in adolescents, can cause discomfort and interfere with daily activities. This can cause a decrease in the quality of life for female students. This study aims to determine association of dysmenorrhea and quality of life in female students at Xaverius 1 Palembang Senior High School. This study was an observational analytic study with cross sectional design conducted in July-December 2018. The population in this study were all students of Xaverius 1 Senior High School Palembang. With total sampling, the number of sample was 423 students. Data obtained by using questionnaire. The data obtained were analysed by Chi-Square Test. Students between 14-18 years old. The prevalence of students suffering from dysmenorrhea is 67,5%. The proportion of students suffering from mild pain was 28.7%, moderate pain was 60,5%, and severe pain was 10,8%. From 423 female students, 54,3% were classified as poor physical functions, 68,1% poor emotional function, 29,6% poor social functions, 74,5% poor school function, and 37,6% poor quality of life. There was association between dysmenorrhea and quality of life, physical function, emotional function, school function ($p < 0,05$). There was no association between dysmenorrhea and social function ($p > 0,05$). There was association between the degree of dysmenorrhea pain and quality of life, physical function, emotional function, social function, school function ($p < 0,05$). There is association between dysmenorrhea dan quality of life in female students at Xaverius 1 Palembang Senior High School.*

Keyword: *dysmenorrhea, quality of life, Pedsql*

1. Introduction

Dysmenorrhea, cramping or painful pelvic pain menstrual compilation, occurs because the uterus contracts excessively due to an increase in prostaglandin production, especially PGF2α and PGE2 from the uterus.[1] In general, dysmenorrhea can be divided into two categories, namely primary dysmenorrhea, which occurs without any organic abnormalities in the pelvis and secondary dysmenorrhea, which occur due to pathological processes. Dysmenorrhea is most common in teenage women. As many as 90% of female adolescents around the world have problems during menstruation and more than 50% of these problems are primary dysmenorrhea.[2]

Increased production and release of prostaglandins during menstruation increases abnormal uterine activity, which then causes uterine hypoxia and pain. Increased uterine activity and uterine ischemia or hypoxia are the two main factors causing pain. Prostaglandins, such as prostaglandin E2, and the endoperoxide cycle cause hypersensitivity of pelvic and uterine pain fibers to substances or factors that stimulate pain.[3]

In Indonesia the prevalence of dysmenorrhea is 64.25% consisting of 54.89% of primary dysmenorrhea and 9.36% of secondary dysmenorrhea. From 60-75% of primary dysmenorrhea experienced by adolescents, three-quarters of the number of mild to moderate adolescents and a quarter is difficult to overcome.[4] However, most teenagers do not seek medical help for their pain because they are menstruation a normal part of a woman's menstrual cycle. [5]

Primary dysmenorrhea appears with or immediately after menarche. This can occur within six months after menarche because it only occurs during the ovulation cycle. However, dysmenorrhea may also occur a year after menarche.[6] Previous studies have shown that many factors are associated with dysmenorrhea. These factors include menarche age, lifestyle, hormonal disorders, and genetics. Menarche age is too early (<12 years old), reproductive organs that have not yet developed. Maximum exposure to prostaglandin hormone will last longer. Hope the contoured uterus will be stronger so there will be pain in menstrual compilation.[7] Besides causing pain, dysmenorrhea can be approved with other complaints such as headaches, nausea, vomiting, and constipation. This happens because prostaglandins not only stimulate smooth muscle in the uterus, but also stimulate smooth muscle elsewhere.[8]

Quality of life in women with dysmenorrhea can decrease. According to WHO (World Health Organization) quality of life is the individual's perception of their position related to life goals, expectations, standards and attention. Quality of life has a broad concept, so it can be evaluated from various aspects such as physical health, psychological state, emotional state, social relations, and satisfaction in life.[9] In women, dysmenorrhea is found to have a significant association with approving daily activities. The most common dysmenorrhea in women is the cause of women being absent from school or work.[10] In adolescents, the inconvenience of menstrual compilation has a major influence on daily routine activities. Menstrual pain, headaches, nausea, mutations and diarrhoea experienced by adolescents cause them to avoid many routine activities including going to school. Besides that, the discomfort of dysmenorrhea also causes teenagers to lose concentration and causes social relations to be bad.[11,12]

Dysmenorrhea can divert the daily activities of adolescents and cause a decrease in quality of life in adolescents who suffer from dysmenorrhea. This study tries to find out association of dysmenorrhea and quality of Life in Female Students at Xaverius 1 Senior High School Palembang Academic Year 2018-2019.

2. Research Methods

This type of research is an analytic observational study with a cross sectional approach conducted from July to December 2018. The study sample was all students of Xaverius 1 Palembang High School in the Academic Year 2018-2019 which met the following inclusion and exclusion criteria:

a. Inclusion
   1. Students are present at school at the time of the interview.
   2. Students are willing to participate in filling out questionnaires from researchers.
b. b. Exclusion
   1. <13 years old or> 18 years old.
   2. Has not experienced menstruation yet (menarche).
   3. Has undergone surgical surgery around the abdomen or reproductive organs.

The sampling technique in this study was total sampling. The data collected is primary data using a questionnaire. Quality of life variables were obtained using a quality of life questionnaire based on the PedsQL questionnaire.

Quality of life variables are divided into: (1) physical function, (2) emotional function, (3) social function, (4) school function, (5) and overall quality of life.[13] Physical, emotional, social, and school functions are categorized as bad if the value is <80, or good if the value ≥ 80 and for the overall quality of life are categorized as bad if the value is <70, or good if the value is ≥ 70.[14] In the study students said dysmenorrhea if there was pain such as muscle spasms that arise in the lower and surrounding abdomen within the previous three months during the last menstrual cycle. The degree of dysmenorrhea pain in this study was obtained using a VAS scale (Visual Analog Scale). Mild pain is categorized if the value 1,2 or 3, moderate pain if 4,5,6 or 7, and severe pain when answering 8, 9, or 10.[15]

Descriptive data analysis is used to determine the distribution of female students based on age, quality of life, dysmenorrhea and degree of pain in female dysmenorrhea. Bivariate analysis used is Chi-Square to determine the association between dysmenorrhea and quality of life for female students.

3. Results

As many as 429 out of 540 female students of Xaverius 1 Senior High School Palembang were willing to be respondents of the study. Of these, there were 6 respondents excluded, namely: 3 respondents because they had undergone surgical operations around the abdomen or reproductive organs, 2 respondents because of the pain that occurred in the waist area not in the lower abdominal area or around it, and 1 respondent was excluded because last menstruation occurred more than five weeks ago.

Table 1. shows the distribution of students by age. Of the total 423 respondents, the most were 15-year-old students (33.8%), 16 years (31%), 17 years old 25.1%, and 14 years old 9.7%. Meanwhile, the fewest were students aged 18 years 0.5%.

Table 1. Distribution of female students based on age (N=423)

Age	n	%
14 years old	41	9,7
15 years old	143	33,8
16 years old	130	31,0
17 years old	106	25,1
18 years old	2	0,5

In Table 2. there are data on student distribution based on physical function, emotional function, social function, school function, and overall quality of life. Of the 423 female students, 54.3% of female students were classified as physical functions of poor quality of life, while 45.7% of female students belonged to physical functions of good quality of life. Students belonging to the emotional function of poor quality of life are 68.1%. The rest (31.9%) is classified as an emotional function of good quality of life. Students belonging to the social function of poor quality of life are 29.6%. Meanwhile, female students belonging to the social function of good quality of life are still relatively high, that is equal to 70.4% and of the 423 female students, there are 74.5% female students who

are classified as school functions of poor quality of life. The rest (25.5%) is classified as a school function with a good quality of life. Students who are classified as poor quality of life are 37.6%.

Table 2. Distribution of female students based on physical function, emotional function, social function, school function, and quality of life (N=423)

		n	%
Physical function	Poor (<80)	230	54,4
	Good (>=80)	193	45,6
Emotional function	Poor (<80)	288	68,1
	Good (>=80)	135	31,9
Social function	Poor (<80)	125	29,6
	Good (>=80)	298	70,4
School function	Poor (<80)	315	74,5
	Baik (>=80)	108	25,5
Quality of life	Poor (<70)	159	37,6
	Good (>=70)	264	62,4

In Table 3. data are presented on the distribution of students who suffer from dysmenorrhea and not dysmenorrhea. Of the 423 female students who were respondents to the study, the proportion of students who suffered from dysmenorrhea was 67.5%, while female students who did not suffer from dysmenorrhea were 32.5%.

Table 3. Distribution of dysmenorrhea and dysmenorrhea

	n	%
Dysmenorrhea	286	67,6
Not dysmenorrhea	137	32,4

The degree of dysmenorrhea pain is categorized into three levels, namely mild, moderate and severe. Of the 286 female students suffering from dysmenorrhea, it was seen that 60.5% of students were classified as moderate, then 28.7% were classified as mild and the rest (10.8%) were classified as severe (See Table 4).

Table 4. Distribution of female students based on the degree of dysmenorrhea pain (N=286)

Degree of dysmenorrhea pain	n	%
Mild (VAS 1-3)	82	28,7
Moderate (VAS 4-7)	173	60,5
Severe (VAS 8-10)	31	10,8

Table 5. Association between dysmenorrhea and physical function, emotional function, social function, school function, and quality of life (N=423)

	Physical function		p_value
	Poor	Good	
Dysmenorrhea	92(67%)	94(33%)	0,000
Not dysmenorrhea	38(28%)	99(72%)	
Emotional function			
	Poor	Good	
Dysmenorrhea	213(74%)	73(26%)	0,000
Not dysmenorrhea	75(55%)	62(45%)	
Social function			
	Poor	Good	
Dysmenorrhea	88(31%)	198(69%)	0,427
Not dysmenorrhea	37(27%)	100(73%)	
School function			
	Poor	Good	
Dysmenorrhea	228(80%)	58(20%)	0,000
Not dysmenorrhea	87(64%)	50(36%)	
Quality of life			
	Poor	Good	
Dysmenorrhea	135(47%)	151(53%)	0,000
Not dysmenorrhea	24(18%)	113(82%)	

Data on the association between dysmenorrhea and physical function, emotional functioning, social function and quality of life school functions are presented in Table 5. From the results of the Chi-Square statistical test, a $p<\alpha$ value was obtained in the test of the association between dysmenorrhea and physical function, emotional function, and quality of life school functions. Meanwhile, $p>\alpha$ values were obtained in the test of the association between dysmenorrhea and social function of quality of life.

The association between the degree of dysmenorrhea pain and physical function, emotional function, social function, school function, and quality of life can be seen in Table 6. From the results of the Chi-Square statistical test, the value of $p<\alpha$ in the test of

the association between the degree of dysmenorrhea pain and physical function, emotional function, social function, and school functions of quality of life.

Table 6. Association between the degree of pain in dysmenorrhea and physical function, emotional function, social function, school function, and quality of life (N=423)

	Physical function		p_value
	Poor	Good	
Mild	192(100%)	0(0%)	0,000
Moderate	130(75%)	43(25%)	
Severe	31(38%)	51(62%)	
	Emotional function		
	Poor	Good	
Mild	28(93%)	3(7%)	0,007
Moderate	133(77%)	40(23%)	
Severe	52(63%)	30(37%)	
	Social function		
	Poor	Good	
Mild	14(45%)	17(55%)	0,014
Moderate	58(34%)	155(66%)	
Severe	16(20%)	66(80%)	
	School function		
	Poor	Good	
Mild	30(97%)	1(3%)	0,013
Moderate	139(80%)	34(20%)	
Severe	59(72%)	23(28%)	
	Quality of life		
	Poor	Good	
Mild	28(90%)	3(10%)	0,000
Moderate	89(51%)	84(49%)	
Severe	18(22%)	64(78%)	

4. Discussion

In this study, students of Xaverius 1 High School Palembang ranged from 14-18 years. Of the 423 female students, it was found that the prevalence of dysmenorrhea female students in Xaverius 1 High School Palembang was 67.5%.This prevalence is almost the same as the previous study which stated that the prevalence of dysmenorrhea in Indonesia was 64.25%. This prevalence is quite high because dysmenorrhea is most prevalent in teenage women.[4]

Students who suffer from dysmenorrhea are then categorized into three levels, namely female students who experience mild pain, moderate pain and severe pain. The most prevalent proportion of pain in dysmenorrhea was moderate pain at 60.5%, then mild pain 28.7% and at least severe pain 10.8%. These results are in accordance with previous studies which found that the proportion of the most painful degrees of dysmenorrhea was moderate pain (44.3%) and the least was severe pain (23%).[16]

The quality of life of female students in this study was assessed to be: (1) physical function, (2) emotional function, (3) social function, (4) individual school function, and (5) overall quality of life of female students. In this study, the individual school functions in question are student activities in daily school, such as the concentration of students to receive lessons, remembering student materials, the ability to complete assignments, and the presence of students in school. Of the 423 female students of Xaverius 1 High School in Palembang, 54.3% belonged to physical functions of poor quality of life, 68.1% belonged to the emotional function of poor quality of life, and 74.5% of students belonged to school functions poor quality of life during menstruation. Meanwhile, female students classified as social functions of poor quality of life were found to be only 29.6%, and female students classified as poor quality of life when menstruating were 37.6%.

There was a significant association between dysmenorrhea and quality of life (p<0.05), and there was a significant association between the degree of dysmenorrhea pain and quality of life (p<0.05) female students of Xaverius 1 High School Palembang. Dysmenorrhea is one of the factors that can affect a woman's quality of life. The

quality of life for women with dysmenorrhea is relatively worse compared to women who do not have dysmenorrhea. Menstrual pain, abdominal pain, nausea, vomiting and diarrhoea that occur during dysmenorrhea, are causes of decreased physical ability, job satisfaction, self-confidence, and concentration, and cause women to avoid routine activities that can affect their quality of life.[12,16]

Menstrual pain causes women to avoid a lot of physical activity during dysmenorrhea. In addition, accompanying symptoms such as abdominal pain, nausea, vomiting, and diarrhoea cause discomfort. As a result, women with dysmenorrhea tend to prefer to spend their time in bed and not engage in physical activity.[10,12,17] In this study found a significant association between dysmenorrhea and physical function of quality of life (p<0.05) and there was a significant association between the degree of pain dysmenorrhea and physical function of quality of life of female students (p<0.05). This shows that there is an association between dysmenorrhea and physical function of female students of Xaverius 1 High School Palembang. The results obtained were in accordance with previous studies which stated that there was an association between dysmenorrhea and quality of life, especially in physical health functions (p<0.05).[16]

Same with the previous research which stated that there was a significant association between dysmenorrhea and routine activities, including female school activities (p<0.05), this study also found a significant association between dysmenorrhea and school function in female quality of life (p <0.05) and the association between the degree of pain in dysmenorrhea and the school function of the quality of life for students of Xaverius 1 High School in Palembang (p<0.05). Dysmenorrhea has a detrimental effect on daily activities and is a major cause of absent adolescents in school. Menstrual pain when dysmenorrhea occurs can cause student learning activities to be disrupted. This happens because female students have difficulty concentrating due to a feeling of discomfort when menstrual pain.

Students who suffered from severe dysmenorrhea pain were also found asking for permission to go home or ask permission to rest in the health room. As a result, female students limit their daily school activities and their school functions become disrupted.[18,19]

Previous research stated that there was a significant association between dysmenorrhea and PMS (p<0.05).[11] In general, dysmenorrhea can be associated with Premenstrual Syndrome because there are two PMS symptoms, namely, physical symptoms and psychological symptoms. Psychological symptoms can cause anxiety, discomfort, and emotional instability. Therefore, women who are suffering from emotional dysmenorrhea tend to become unstable so that the emotional function of a woman's quality of life becomes worse.[11,20] In this study it was found that there was an association between dysmenorrhea and the emotional function of female quality of life (p<0.05) and there was a correlation between the degree of pain in dysmenorrhea and emotional functioning of living conditions (p<0.05). This shows that there is an association between dysmenorrhea and the emotional function of the quality of life of students of Palembang Xaverius 1 High School.

There was no association between dysmenorrhea and the social function of the quality of life of female students in Palembang Xaverius 1 High School (p>0.05). However, there is a significant association between the degree of dysmenorrhea and the quality of life of female students (p<0.05).[16] This is in line with previous studies which found that there was no association between dysmenorrhea and social function of quality of life (p>0.05), but there was a correlation between the degree of pain in dysmenorrhea and social function of quality of life (p<0.05). that dysmenorrhea does not directly affect social, mental, and emotional activities. However, with increasing degrees of pain dysmenorrhea can cause a decline in all aspects of quality of life, including social functions of quality of life. This can occur because, emotional disorders, tension and anxiety that occur when dysmenorrhea can affect one's skills and skills.

The skills and skills in question mean broad, both personal skills that include; self-awareness, thinking skills, academic skills, vocational skills, and social skills. Women with dysmenorrhea have problems with their social skills, both with family and friends. This happens because dysmenorrhea affects the mood which results in a bad attitude in the family and among friends. Therefore, women who suffer from dysmenorrhea tend to not engage in social activities and withdraw from friends, family or associations.[15,21]

5. Conclusions

From the results of research conducted on female students at Xaverius 1 High School in Palembang, conclusions were obtained; 54.3% classified as poor physical function, 68.1% classified as poor emotional function, 29.6% classified as social function poor quality of life, 74.5% classified as poor school function and 37.6% classified as poor quality of life.

The prevalence of dysmenorrhea female students is 67.5%. The proportion of female students based on dysmenorrhea pain is; 28.7% mild, 60.5% moderate, and 10.8% severe.

There is an association between dysmenorrhea and quality of life, physical function, emotional function, and school function.

There is no association between dysmenorrhea and social function.

There is a association between the degree of dysmenorrhea pain and quality of life, physical function, emotional function, social function, and school function.

References

1. Bernardi M, Lazzeri L, Perelli F, Reis FM, Petraglia F. Dysmenorrhea and Related Disorders. *F1000Research*. 2017;6(0):1645.
2. Proctor M. Diagnosis and Management of Dysmenorrhea. *Bmj*. 2006;332(7550):1134-1138.
3. Dawood MM. Dysmenorrhea. *Glob Libr Women's Med*. 2009.
4. Larasati T, Alatas F. Dismenore Primer dan Faktor Risiko Dismenore Primer pada Remaja. 2016;5(3):79-84.
5. Iacovides S, Avidon I, Baker FC. What We Know About Primary Dysmenorrhea Today: A Critical Review. *Hum Reprod Update*. 2015;21(6):762-778.
6. Dawood MY. Primary Dysmenorrhea: Advances in Pathogenesis and Management. *Obstet Gynecol*. 2006;108(2):428-441.
7. Kural M, Noor NN, Pandit D, Joshi T, Patil A. Menstrual Characteristics and Prevalence of Dysmenorrhea in College Going Girls. *J Fam Med Prim Care*. 2015;4(3):426-431.
8. Beckmann C, Ling F, Herbert W, et al. *Obstetrics and Gynecology*. Williams & Wilkins; 2014.
9. Theofilou P. Quality of life: Definition and measurement. *Eur J Psychol*. 2013;9(1):150-162.
10. Charu S, Amita R, Sujoy R, Thomas GA. Menstrual Characteristics and Prevalence and Effect of Dysmenorrhea on Quality of Life of Medical Students. *Int J Collab Res Intern Med Public Heal*. 2012;4(4).
11. Joshi T, Kural M, Agrawal D, Noor N, Patil A. Primary Dysmenorrhea and its Effect on Quality of Life in Young Girls. *Int J Med Sci Public Heal*. 2015;4(3):381. doi:10.5455/ijmsph.2015.0711201472
12. Ahuja A. Impact of Dysmenorrhea on Quality of Life of Adolescent Girls of Chandigarh. *J Child Adolesc Behav*. 2016;4(3):1-5.
13. Mapi Group. Scaling and Scoring of the Pediatric Quality of Life Inventory-PedsQL. 2017;(May 2017).
14. Aji DN, Silman C, Aryudi C, Andalia D. Faktor–faktor yang Berhubungan dengan Kualitas Hidup Pasien Thalassemia Mayor di Pusat Thalassemia Departemen Ilmu Kesehatan Anak RSCM. *Sari Pediatr*. 2009;11(2):85-89.
15. Rakhshaee Z. A Cross-sectional Study of Primary Dysmenorrhea among Students at a University: Prevalence,

Impact and of Associated Symptoms. *Annu Res Rev Biol Orig Res Artic Annu Res Rev Biol*. 2014;4(418):2815-2822.

16. Arslan G, Calik E. Prevalence of Dysmenorrhea and its Effect on Quality of Life among a Group of Female University Students. *Ups J Med Sci*. 2010;115(2):138-145.

17. Kumbhar SK, Reddy M, Sujana B, et al. Prevalence of Dysmenorrhea among Adolescent Girls (14-19 Years) of Kadapa District and Its Impact on Quality of Life. *Natl J Community Med*. 2011;2(2):265-268.

18. Saguni FCA, Madianung A, Masi G. Hubungan Dismenore dengan Aktivitas Belajar Remaja Putri di SMA Kristen I Tomohan. *J Keperawatan*. 2013;1(1):1-6.

19. Derseh B, Afessa N, Temesgen M, et al. Prevalence of Dysmenorrhea and its Effects on School Performance: A Crosssectional Study. *J Womens Heal Care*. 2017;6(2):1-6.

20. Negriff S, Dorn LD, Hillman JB, Huang B. The Measurement of Menstrual Symptoms. *J Health Psychol*. 2009;14(7):899-908.

21. Lestari NMSD. Pengaruh Dismenorea pada Remaja. *Semin Nas FMIPA UNDIKSHA III*. 2013:323-329.