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Original Research Article

Association of primary dysmenorrhea with socio-economic status and education level in patients attending gynaecology OPD in a tertiary care centre: a questionnaire-based study

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ABSTRACT

Background: Dysmenorrhea is defined as painful menstrual cramps of uterine origin which is often accompanied by low backache, nausea and vomiting, headache, or diarrhoea. Primary dysmenorrhea defines cyclic menstrual pain without an identifiable associated pathology.
Methods: This cross-sectional study was conducted among patients attending gynaecology OPD of ASCOMS and Hospital. Data was collected using a pretested structured self-administered questionnaire. Aim was to study the association of primary dysmenorrhea with socio-economic status and educational status in patients attending gynaecology OPD in ASCOMS and hospital.
Results: A total of 584 patients participated in the study with age between 20-40 years. 409 (70%) of the patents suffered from primary dysmenorrhea. Patients who belonged to upper socioeconomic status were 2.71 times more likely to experience primary dysmenorrhea as compared to those who belonged to lower socioeconomic class (AOR 2.71, 95% CI (1.41, 5.16)) and the result was found to be statistically significant. However, the educational status of the patient was not significantly associated with the prevalence of dysmenorrhea.
Conclusions: Participants belonging to the upper socioeconomic status were found to be more severly affected with primary dysmenorrhea than those who belonged to the lower socioeconomic status. Thus, we conclude that primary dysmenorrhea can be considered as a psychosomatic disorder. It needs counselling and stress management education as a first line management rather than any pharmacological treatment.

Keywords: Primary dysmenorrhea, Socioeconomic status, Educational status

INTRODUCTION

Dysmenorrhea is defined as painful menstrual cramps of uterine origin which is often accompanied by low backache, nausea and vomiting, headache, or diarrhoea. According to the pathophysiology, it is classified as primary or secondary dysmenorrhea. Primary dysmenorrhea defines cyclic menstrual pain without an identifiable associated pathology.[1] Secondary dysmenorrhea is associated with some underlying gynecological pathology like endometriosis, leiomyomas, PID, adenomyosis, endometrial polyps, and menstrual outlet obstruction. These spasmodic and painful cramps in the lower abdomen may begin shortly before or at the onset of menses. The mechanisms of menstrual cramps are believed to be caused by hyper- production of uterine prostaglandins, particularly of prostaglandins F2α, which results in myometrial hyper contractility and arterial vasoconstriction.[2] Prostaglandin production is controlled by progesterone; when progesterone levels drop, immediately prior to menstruation prostaglandin level increase. These increase in prostaglandin level cause muscles contraction in uterus, which cause pain during menstrual flow.[3,4] Dysmenorrhea is one of the most

frequently happened gynaecological disorders especially among adolescent girls. There is large variation in the reported prevalence of primary dysmenorrhea between different countries and sometimes within the same country, which could be due to the use of different definitions of the condition.[5] However, global estimates have reported that the magnitudes of dysmenorrhea ranges from 41.7% to 94%. primary dysmenorrhea can cause a substantial burden on the quality of life of women or female adolescents.[6,7] it has a potential to negatively affect their relationships with family members and friends, school or work performance in addition to social and recreational activities. A number of factors have been associated with primary dysmenorrhea. In a review article, Ju et al. has reported that high body mass index (BMI), early age of menarche, longer and heavier menstrual flow, family history of dysmenorrhea and smoking are the predisposing factors for dysmenorrhea.[8] There is a need to give proper attention to better prevention and management practices, and hence to improve the quality of life, productivity and academic performance of these adolescent girls. Our study aimed to establish the association of dysmenorrhea with the socioeconomic status of a person and educational status of the patient.

Aim and objectives

Objectives of current investigation was to study the association of primary dysmenorrhea with socio-economic status and educational status in patients attending gynaecology OPD in ASCOMS and hospital.

METHODS

This cross-sectional study was conducted among patients attending gynaecology OPD of ASCOMS & Hospital over a period of six months from July to December 2022. Study participants were selected by simple random sampling based on inclusion and exclusion criteria. Data was collected using a pretested structured self-administered questionnaire.

Inclusion criteria

Patients attending gynaecology and obstetrics OPD in ASCOMS and Hospital, Age 20-40 years and Participants giving valid consent were included.

Exclusion criteria

Participants having history of any pelvic pathology were excluded.

Data processing and analysis

The collected questioners first manually checked for completeness, and then the data was coded and entered using Epi data version 3.1 and exported to SPSS version 26 for data analysis. The descriptive statistics, such as frequency, percentage, mean, standard deviation was performed to describe study population. Bi-variable binary logistic regression model was computed to test the presence of crude association between primary dysmenorrhea and independent variables and to identify candidate variables for multivariable analysis. All variables in bi-variable analysis with $p<0.25$ were included in multivariable binary logistic regression analysis. Significance factors were identified based on $p<0.05$. Finally, text and tables were used to present the result.

RESULTS

A total of 584 patients participated in the study with age between 20-40 years. Most of the patients had their menarche between 13-17 years. 80.8% of the patients had regular menstrual cycles. Average duration of blood flow in 94.3% of the patients was 3-6 days and the average length of menstrual cycle in 97.4% of the patients was 21-35 days. The patients were almost equally distributed among the different parity subclasses (Table 1).

Table 1: Demographic and menstrual characteristics of participants (n=584).

Variables	Categories	N	%
Age (years)	20-29	258	44.2
	30-39	326	55.8
Age at menarche (years)	<13	61	10.4
	13-17	449	76.9
	>17	74	12.7
Duration of blood flow (days)	<3	26	4.5
	3-6	551	94.3
	>6	7	1.2
Length of menstrual cycle (days)	<21	1	0.2
	21-35	569	97.4
	>35	14	2.4
Menstrual cycle regularity	Yes	472	80.8
	No	112	19.2
No. of children	Nil	164	28.1
	1	206	35.3
	≥2	214	36.6
Do you have painful periods?	Yes	409	70
	No	175	30

According to our study, 409 (70%) of the patents suffered from primary dysmenorrhea. According to the multidimensional scoring system 43.7% experienced mild pain, 51.9% moderate pain and 4.4% severe pain. About 43.7% of the patients had pain that started a few days before menstrual flow and another 51.3% had pain during the first day of menstrual flow. Most of the patients had pain for 1 or 2 days. 57.9% of the patients resorted to oral medication for pain out of which 55.7% took medicine once a day and 35.9% took it twice daily (Table 2).

About 80.9% of the patients had associated symptoms of which diarrhea was the most common. 44.7 % of patients has positive family history of dysmenorrhea. According to our study, 0.7% of the patients missed at least a day of

school or work due to pain and another 53% said they could attend school or work only on taking medication. Patients who belonged to upper socioeconomic status were 2.71 times more likely to experience primary dysmenorrhea as compared to those who belonged to lower socioeconomic class; AOR 2.71, 95% CI (1.41, 5.16) and the result was found to be statistically significant.

Table 2: Parameters associated with dysmenorrhea (n=409).

Variables	Categories	N	%
Duration of pain (days)	1	193	47.3
	2	206	50.3
	3	8	1.8
	4	2	0.6
Which is the most severe day of pain?	One day before periods	196	47.9
	First day of periods	210	51.3
	Second day of periods	3	0.8
Grade the severity of pain	Mild	179	43.7
	Moderate	212	51.9
	Severe	18	4.4
What do you do for pain relief?	Rest	78	19.1
	Home remedies	94	23
	Oral medicine	237	57.9
	Injectable medicine	0	0
How many times do you take medicine in a day? (n=237)	1 time	132	55.7
	2 times	85	35.9
	3 times	18	7.6
	4 times	2	0.8
Are you absenting from school or work more often during your periods because of pain?	Yes, I skip one or more days of school or work every month because of pain	3	0.7
	No, I can go to school or work during periods but only if I take medicine	217	53
	No, I don't skip school or work	189	46.3
Did you ever seek medical consultation for dysmenorrhea?	Yes, I have been hospitalized for dysmenorrhea	0	0
	Yes, I had to visit emergency for dysmenorrhea	16	3.9
	Yes, I have visited OPD for dysmenorrhea	74	18.1
	No	319	78
Do you have any associated symptoms?	Yes	331	80.9
	No	78	19.1
Do you have a family history of dysmenorrhea?	Yes	183	44.7
	No	226	55.3

Table 3: Socioeconomic factors and its association with primary dysmenorrhea.

Variables	Categories	Dysmenorrhea		COR (95% CI)	AOR (95% CI)
		Yes (n=409)	No (n=175)		
Socio economic status	Lower class	111	59	1	1
	Middle class	227	101	1.21 (0.83-1.72)	1.19 (0.78-1.73)
	Upper class	71	15	2.70 (1.51-4.93)	2.71 (1.41-5.16)**
Patient education status	Professional or Honor's graduate	124	45	1	1
	Intermediate or diploma high school certificate	126	46	0.92 (0.61-1.45)	0.93 (0.58-1.49)
	Middle school certificate	69	39	0.62 (0.39-0.99)	0.65 (0.39-1.08)
	Primary school certificate	63	33	0.68 (0.41-1.13)	0.74 (0.43-1.27)
	Illiterate	27	12	0.87 (0.44-1.74)	0.84 (0.38-1.74)

** Indicates variables significant at p<0.01, COR, crude odds ratio; AOR, adjusted odds ratio; CI, confidence interval.

However, the educational status of the patient was not significantly associated with the prevalence of dysmenorrhea (Table 3).

DISCUSSION

In our study, the prevalence of primary dysmenorrhea was 70% (409). Omidvar et al in their study on Indian female students also reported the prevalence of dysmenorrhea of 70.2%.[9] Another study by Singh et al reported a prevalence of 73.83% which was consistent with our findings.[10] This finding was comparable to findings in studies done by Muluneh et. al (69.3%) in Markos et al, Mohammed et al (69.26%) in Hararegie et al Acheampong et al (68.1%) in Ghana, Pitangui et al (73%) in Brazil.[10-14] However, the prevalence of dysmenorrhea was reported to be higher in studies done by Mohamed et al (76%) in Egypt, Sidi et al (78.3%) in Benin, AL-Matouq et al (85.6%) in Kuwait and Sima et al (78.4%) in Romania.[15-18] The prevalence of dysmenorrhea was reported to be lower in the studies conducted by Hu et al (41.7%) in China, Onu et al (51.1%) in Nigeria, Tadese et al (51.5%) in Hawassa, Jang et al (58.8%) in South Korea and Gagua et al (52%) in Geoggia.[19-23] These differences could be attributed to the socioeconomic differences among these study groups. Also, different populations may have different thresh holds for perception of pain due to varying cultural practices. Out of these 409 participants, 179 (43.7%) had mild pain, 212 (51.9%) had moderate pain and 18 (4.4%) had severe pain. These findings were comparable to those of the study done by Mohammed et al (mild-48%, moderate-40%, severe-12%). According to our study, participants belonging to upper socioeconomic status demonstrated a 2.71 times higher risk of experiencing primary dysmenorrhea as compared to those belonging to lower socioeconomic status. Avarsarala et al in their study also concluded that girls in urban areas are not only suffering more but also missing their classes and work.[24] Similar findings were seen in a study done by Weisman et al.[25]

CONCLUSION

Primary Dysmenorrhea is a major health burden in the society. Participants belonging to the upper socioeconomic status were found to be more severely affected with primary dysmenorrhea than those who belonged to the lower socioeconomic status. Upper status participants more often resorted to medication. This can be attributed to the low threshold of tolerance among these participants and even though they were better nourished, they were more affected. On the other hand, participants belonging to the lower socioeconomic status were well tolerant and did not let dysmenorrhea affect their day-to-day activities. Thus, we conclude that primary dysmenorrhea can be considered as a psychosomatic disorder. It needs counselling and stress management education as a first line management rather than any pharmacological treatment.

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REFERENCES

1. Osayande AS, Mehulic S. Diagnosis and initial management of dysmenorrhea. Am Fam Physic. 2014;89:341-6.
2. Dutta D. Textbook of Gynecology: Including Contraception. India: Jaypee Brothers Medical Publishers; 2013: 178-184.
3. Bernardi M, Lazzeri L, Perelli F, Reis FM, Petraglia F. Dysmenorrhea and related disorders. F1000 Res. 2017;6:1645.
4. Lefebvre G, Pinsonneault O, Antao V, Black A, Burnett M, Feldman K, Lea R, Robert M; SOGC. Primary dysmenorrhea consensus guideline. J Obstet Gynaecol Can. 2005;27(12):1117-46.
5. Iacovides S, Avidon I, Baker FC. What we know about primary dysmenorrhea today: a critical review. Hum Reprod Update. 2015;21(6):762-78.
6. Raine-Fenning N. Dysmenorrhoea. Curr Obstet Gynaecol. 2005;15(6):394-401.
7. De Sanctis V, Soliman AT, Elsedfy H, Soliman NA, Soliman R, El Kholy M. Dysmenorrhea in adolescents and young adults: a review in different country. Acta Biomed. 2017;87(3):233-46.
8. Ju H, Jones M, Mishra G. The prevalence and risk factors of dysmenorrhea. Epidemiol Rev. 2014;36(1):104-13.
9. Omidvar S, Bakouei F, Amiri FN, Begum K. Primary Dysmenorrhea and Menstrual Symptoms in Indian Female Students: Prevalence, Impact and Management. Glob J Health Sci. 2016;8(8):53632.
10. Singh A, Kiran D, Singh H, Nel B, Singh P, Tiwari P. Prevalence and severity of dysmenorrhea: a problem related to menstruation, among first and second year female medical students. Indian J Physiol Pharmacol. 2008;52(4):389-97.
11. Muluneh AA, Gebreslasie KZ, Anteneh KT, Kassa ZY. Prevalence and associated factors of dysmenorrhea among secondary and preparatory school students in Debremarkos town, North-West Ethiopia. BMC Womens Health. 2018;18(1):1-8.
12. Mohammed H, Hassen N, Musa A. Dysmenorrhea and associated factors among secondary school students in East Hararghe Zone, Eastern Ethiopia. East Afr J Health Biomed Sci. 2019;3(1):39-48.
13. Acheampong K, Baffour-Awuah D, Ganu D, Appiah S, Pan X, Kaminga A, et al. Prevalence and Predictors of Dysmenorrhea, Its Effect, and Coping Mechanisms among Adolescents in Shai Osudoku District, Ghana. Obstet Gynecol Int. 2019;2019:5834159.
14. Pitangui ACR, Gomes MR, Lima AS, Schwingel PA, Albuquerque AP, de Araújo RC. Menstruation disturbances: prevalence, characteristics, and effects on the activities of daily living among adolescent girls from Brazil. J Pediatr Adolesc

Gynecol. 2013;26(3):148-52.
15. Mohamed EM. Epidemiology of dysmenorrhea among adolescent students in Assiut City, Egypt. Life Sci J. 2012;9(1):348-53.
16. Sidi I, Hounkpatin B, Obossou A, Salifou K, Vodouhe Mv, Denakpo Jl, et al. Primary dysmenorrhea in the schools of Parakou: prevalence, impact and therapeutic approach. Gynecol Obstet. 2016;6(376):2161.
17. Al-Matouq S, Al-Mutairi H, Al-Mutairi O, Abdulaziz F, Al-Basri D, Al-Enzi M, et al. Dysmenorrhea among high-school students and its associated factors in Kuwait. BMC Pediatr. 2019;19(1):80.
18. Sima RM, Sulea M, Radosa JC, Findeklee S, Hamoud BH, Popescu M, et al. The Prevalence, Management and Impact of Dysmenorrhea on Medical Students' Lives-A Multicenter Study. Healthcare. 2022;10(1):157.
19. Hu Z, Tang L, Chen L, Kaminga AC, Xu H. Prevalence and risk factors associated with primary dysmenorrhea among Chinese female university students: a cross-sectional study. J Pediatr Adolesc Gynecol. 2020;33(1):15-22.
20. Onu A, Aluh D, Ikehi M. Prevalence and management of dysmenorrhea among secondary school adolescents in Enugu state, Nigeria. J Pediatr Adolesc Gynecol. 2020: 1-14.
21. Tadese M, Kassa A, Muluneh AA, Altaye G. Prevalence of dysmenorrhoea, associated risk factors and its relationship with academic performance among graduating female university students in Ethiopia: a cross-sectional study. BMJ. 2021;11(3):e043814.
22. Jang IA, Kim MY, Lee SR, Jeong KA, Chung HW. Factors related to dysmenorrhea among Vietnamese and Vietnamese marriage immigrant women in South Korea. Obstet Gynaecol Sci. 2013;56(4):242-8.
23. Gagua T, Tkeshelashvili B, Gagua D. Primary dysmenorrhea: prevalence in adolescent population of Tbilisi, Georgia and risk factors. J Turk Ger Gynecol Assoc. 2012;13(3):162.
24. Avasarala AK, Panchangam S. Dysmenorrhoea in different settings: are the rural and urban adolescent girls perceiving and managing the dysmenorrhoea problem differently? Indian J Community Med. 2008;33(4):246.
25. Weissmen AM, Hartz AJ, Hansen MD, Johnson SR. The natural history of primary dysmenorrhoea: A longitudinal study. BJOG. 2004;111:345-52.

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