



## **Prevalence of Dysmenorrhea among Secondary School Students and Its Treatment Modalities**

- 1. Dr.Omar Bassam Ahmad Saleh, Primary Health Care Corporation, Doha , Qatar  
Et el**
- 2. Dr.Abeer Shafeek mahmoud, Primary Health Care Corporation, Doha,Qatar**
- 3. Dr.Abdelrahman M Shaban ,Primar Health care corporation, Doha, Qata**
- 4. Dr.Feisal sad mohamed Katib, Primary health care corporation , Doha , Qatar**
- 5. Dr. Ammar ahmad ismail el fayoumi , Primary Health Care Corporation, Doha ,  
Qatar**

### **ABSTRACT**

**Background and Aim:** Dysmenorrhea is the lower abdominal pain experienced by post-pubescent females during menstruation period and is a kind of impasse due to investigative tests for identification of underlying causes. The present study intended to determine the incidence of dysmenorrhea among secondary school students and its treatment modalities.

**Material and Methods:** This cross-sectional study was carried out on 256 secondary school students in the Department of \_\_Gynaecology\_\_\_\_, Farah Tertiary Care Hospital, Amman City from August 2022 to November 2022. Female students of age range 16-20 years with menstruation prior history, lower back pain, lower abdominal pain, and anterior thigh pain (9-72 hours) were enrolled. Written informed consent was taken from each individual. Females with chronic pelvic diseases such as endometriosis, ovarian cyst, and fibroid, using oral contraceptive pills, and major pelvic surgery were excluded. The menstrual pain severity was graded on scale and classified as mild (1-3), moderate (4-7), and severe (8-10). Data analysis was carried out in SPSS version 26.

**Results:** Of the total 256 students, the incidence of dysmenorrhea was 162 (63.3%) among secondary school students. The incidence of mild, moderate, and severe menstruation pain was



60 (23.4%), 118 (46.1%), and 78 (30.5%) respectively. About 84 (32.8%) students used nonsteroidal anti-inflammatory drugs (NSAIDs) with minor or no improvement. The incidence of menstrual pain with defecation and micturition was 117 (45.8%) and 109 (42.6%) respectively. Hormonal agents was used by null participants.

**Conclusion:** The present study found that incidence of dysmenorrhea was 63.3% among secondary school students. Majority of females used NSAIDs, analgesics, over the counter (OTC), and complementary methods for the pain relief. To reduce unnecessary suffering, it is critical to raise knowledge about the causes and management of dysmenorrhea.

**Keywords:** Dysmenorrhea, Treatment modalities, Secondary school students

## INTRODUCTION

Puberty transforms a young girl into a mature woman by bringing about hormonal, psychological, physical, and cognitive changes [1]. A key milestone of puberty in girls is menstruation, an event triggered by hormones from the hypothalamus and pituitary axis. This process involves the cyclical shedding of the uterine lining [2]. Menstruating women are often treated inhumanely by some cultures and religions that consider them impure, which makes them ineligible for social and dietary privileges [3-5]. It is believed that menstruation marks the beginning of a girl's transformation into a woman in some cultures [6]. In addition to dysmenorrhea, some women had to deal with headaches, dizziness, diarrhea, bloating, nausea, vomiting, backache, and leg pain while on their menstrual cycle [7, 8]. Dysmenorrhea is classified as primary or secondary dysmenorrhea based on pelvic and hormonal pathology. Secondary dysmenorrhea arises due to identifiable pathological conditions such as myomas, or intrauterine devices, endometriosis, ovarian cysts, and pelvic inflammatory disease. In menstrual pain, excessive prostaglandins are produced by the endometrium during the ovulatory cycle,



www.mecej.com

Multi-Knowledge Electronic Comprehensive Journal For  
Education And Science Publications ( MECSJ )

Issues (65) 2023

ISSN: 2616-9185

causing the myometrium to contract, vessels to constrict, and nerve endings to become sensitized [9, 10].

Non-steroidal anti-inflammatory drugs (NSAIDs) such as diclofenac, ibuprofen, mefenamic acid, and naproxen sodium provide respite during primary and secondary dysmenorrhea. Combined oral contraceptives like allopathic supplements reduce the uterine contraction and manage dysmenorrhea by narcotics analgesics [11]. Globally, the incidence of dysmenorrhea varies from 15% to 94% [12, 13]. A previous study conducted in Egypt reported that the overall incidence of dysmenorrhea was 74.6% [14]. Another study reported that dysmenorrhea was present in 94.4% among the study population [15]. Numerous studies found that various risk factors such as higher socioeconomic status, age <20 years, depression, nulliparity, anxiety, heavy menses, and lack of physical activities are significantly associated with dysmenorrhea [16]. Therefore, the present study aimed to determine the prevalence of dysmenorrhea in secondary school students and its treatment modalities.

## METHODOLOGY

A cross-sectional study was carried out on 256 secondary school students in the Department of -  
\_\_Gynaecology\_\_\_\_\_, Farah Tertiary Care Hospital, Amman City from August 2022 to November 2022. Female students of age range 16-20 years with menstruation prior history, lower back pain, lower abdominal pain, and anterior thigh pain (9-72 hours) were enrolled. Written informed consent was taken from each individual. Females with chronic pelvic diseases such as endometriosis, ovarian cyst, and fibroid, using oral contraceptive pills, and major pelvic surgery were excluded. The menstrual pain severity was graded on scale and classified as mild (1-3), moderate (4-7), and severe (8-10). Clinical data such as height, educational level, weight, menstrual characteristics, and age and socio-demographic details were gathered using self-administered questionnaires. Other information included menstruation, pain numerical score on rating scale, and dysmenorrhea symptoms. Pain severity was measured with a rating scale from 1 to 10. Descriptive statistics were carried out in SPSS version 26. All the quantitative variables were expressed as mean and standard deviations whereas qualitative variables were described as



frequency and percentages. Data analysis was done taking 95% confidence interval and 5% level of significance. All the results were presented in tabulated form.

## RESULTS

Of the total 256 students, the incidence of dysmenorrhea was 162 (63.3%) among secondary school students. The incidence of mild, moderate, and severe menstruation pain was 60 (23.4%), 118 (46.1%), and 78 (30.5%) respectively. About 84 (32.8%) students used nonsteroidal anti-inflammatory drugs (NSAIDs) with minor or no improvement. The incidence of menstrual pain with defecation and micturition was 117 (45.8%) and 109 (42.6%) respectively. Hormonal agents were used by null participants. Patients demographic details and menstrual characteristics are shown in Table-I. The duration of the menstrual cycle is shown in Figure-1. Figure-2 illustrates the incidence of severity of menstruation pain among the study population. Distribution of participants based on treatment modalities is shown in Table-II. The presence of symptoms that point to deep infiltrating endometriosis. The occurrence of deep infiltrating endometriosis symptoms among participants is demonstrated in Table-III.

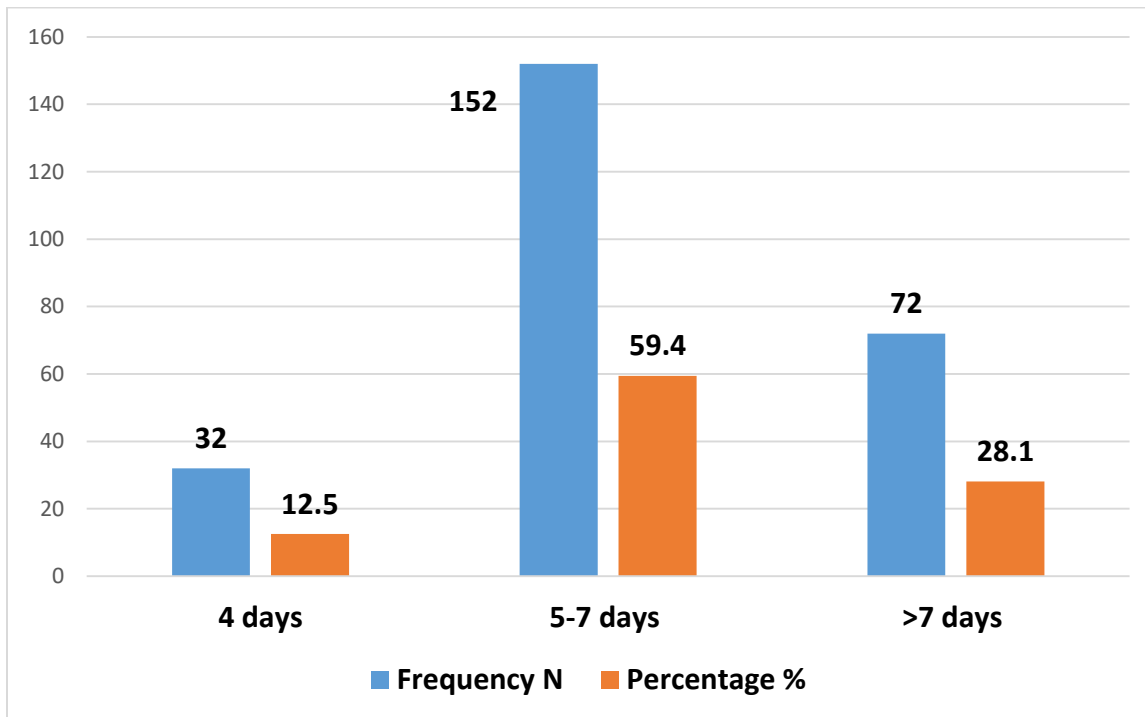


Figure-1 Menstrual cycle duration (days)

Table-I Menstruation characteristics and socioeconomic status of the participants

Parameters	Frequency N	Value or Percentage %
Age (yrs.)	256	15.26±1.92
<b>Education level</b>		
Illiterate	16	6.3
High school	114	44.5
HSS	38	14.8
Higher education	88	34.4
<b>Own period's perception</b>		
Normal	176	68.8
Abnormal	64	25
Don't know	16	6.2

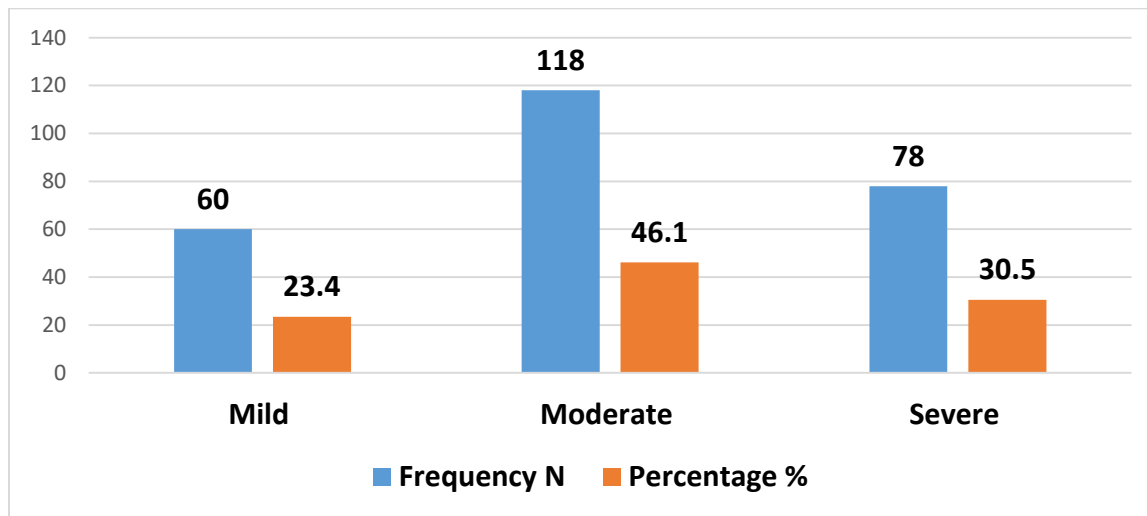


Figure-2 Incidence of severe, moderate, and mild menstruation pain on scale (1-10)



Table-II Distribution of participants based on treatment modalities

Modalities	Frequency N	Percentage %
NSAIDs	84	32.8
No treatment	172	67.2
Hormonal	0	0

Table-III occurrence of deep infiltrating endometriosis suggestive symptoms among participants

Deep infiltrating endometriosis symptoms	Yes N (%)	No N (%)
Pain during defecation in menstrual cycle	42 (16.4)	214 (82.6)
Pain in urination during menstrual cycle	32 (12.5)	224 (87.5)
Dysmenorrhea persistence after bleeding cessation	36 (14.1)	220 (85.9)

## DISCUSSION

The present study investigated the incidence of dysmenorrhea in secondary school students and reported that dysmenorrhea affects 63.3% of secondary school pupils. The majority of females relied on NSAIDs, analgesics, over-the-counter (OTC), and complementary pain treatment approaches. It is vital to increase information about the causes and treatment of dysmenorrhea in order to avoid unnecessary suffering. Reproduction system capability is potentially declared by the physiological process of menstrual cycle. The most prevalent dysmenorrhea is mild one, however, moderate and severe cases of dysmenorrhea cause serious issues and restricting. The



www.mecej.com

Multi-Knowledge Electronic Comprehensive Journal For  
Education And Science Publications ( MECSJ )

Issues (65) 2023

ISSN: 2616-9185

difficulty of prolonged dysmenorrhea is especially severe in teens, when the adverse impact of discomfort can affect scholastic and physical performance [17].

Numerous studies conducted revealed that incidence of dysmenorrhea was 70.6% among which mild, moderate, and severe dysmenorrhea was 21.1%, 74.4%, and 35.2% and 21.1%, 41.4%, and 37.5% respectively [18, 19]. Al Matouq et al [20] reported that incidence of dysmenorrhea was 85.6% whereas Kamel et al. [21] found that prevalence of dysmenorrhea was 84% among university students. Menstrual pain severity was found in 30.5% in our study that was comparable to the one reported 29% in a previous study [22] but higher than another study reported 20% [23].

Wang et al [24] reported the lower prevalence rate of dysmenorrhea 16.8% among students. According to previous studies conducted by Abdul Qadir and Al Asadi [25, 26] the poor academic performance of students is caused by student's distraction and concentration being affected. Another study reported that about 33% participants (females) stopped their physical activities and ceased their regular training due to painful cramps caused by menstrual period [27].

The present study uniquely explored the endometriosis association with different symptoms such as painful defecation and micturition during menstruation. Tender micturition was stated by 45.8% of individuals, which was quite concerning because it might be endometriosis underlying deep infiltrating indication. Another sign was painful defecation throughout the menstruation, which was found in 46.7% of the subjects to varied degrees [28]. Chapron et al. [29] established this as an indirect indicator of DIE, with a sensitivity of 74.5% and a specificity of 68.8%.

The first line of defense against menstruation discomfort is NSAIDs. It should be given 1 - 2 days before menstruation to prevent prostaglandin formation by interfering with the function of the cyclooxygenase enzyme [30]. Failure to react to NSAIDS might be caused by a delay in commencing dose or an inadequate dose. A significant failure rate might be accounted for each participant. Chronic dysmenorrhea adolescents should be evaluated thoroughly to rule out an underlying pathogenic factor [31].



Kamel et al. [32] found that 87.2 % of participants had pain alleviation after NSAIDS usage. This might be connected to the participants' age. Although hormone therapy is widely acknowledged as a dysmenorrhea effective treatment across the world, it is not frequently regarded as a therapeutic option for teenagers in our society.

## CONCLUSION

The present study found that incidence of dysmenorrhea was 63.3% among secondary school students. Majority of females used NSAIDs, analgesics, over the counter (OTC), and complementary methods for the pain relief. To reduce unnecessary suffering, it is critical to raise knowledge about the causes and management of dysmenorrhea.

## REFERENCES

1. Al Mulla, A., Lotfi, G. and Khamis, A.H. (2022) Prevalence of Dysmenorrhea among Female Adolescents in Dubai: A Cross-Sectional Study. *Open Journal of Obstetrics and Gynecology*, 12, 686-705. <https://doi.org/10.4236/ojog.2022.128061>.
2. Bernardi, M., Lazzeri, L., Perelli, F., Reis, F.M. and Petraglia, F. (2017) Dysmenorrhea and Related Disorders. *F1000 Research*, 6, 1645. <https://doi.org/10.12688/f1000research.11682.1>.
3. Arafa A., Khamis Y., Hassan H., Saber N., Abbas M. Epidemiology of dysmenorrhea among workers in Upper Egypt; A cross sectional study. *Middle East Fertility Society Journal*. 2017;23 (1) 0–3.
4. Ahuja A., Sharma M. and Singh A. Impact of Dysmenorrhea on Quality of Life of Adolescent Girls of Chandigarh. *JOCB*.2016; 4: 295.
5. Al-Jefout M., Hijazeen J., Luskomb G., Abu-Fraijeh S., Ola A., Oday A. et al. Dysmenorrhea: Prevalence & Impact on Quality of Life among Young Adult Jordanian Females. *J Pediatr Adolesc Gynecol*.2015 ;28 (3):173-85.
6. Nooh A. Menstrual disorders among Zagazig University Students, Zagazig, Egypt. *Middle East Fertility Society J*. 2015; 20(3): 198–203.





www.mecej.com

Multi-Knowledge Electronic Comprehensive Journal For  
Education And Science Publications ( MECSJ )

Issues (65) 2023

ISSN: 2616-9185

7. Suvitie P., Hallamaa M., Matomäki J., Mäkinen J. Perheentupa A. Prevalence of pain symptoms suggestive of endometriosis among finnish adolescent girls (TEENMAPS study). *J Pediatr Adolesc Gynecol.* 2016 ;29(2):97-103.
8. Abd El-Mawgod M., Alshaibany A. and Al-Anazi, A. Epidemiology of dysmenorrhea among secondary-school students in Northern Saudi Arabia. *J Egypt Public Health Assoc.* 2016; 91(3):115-119.
9. Klemmt, P.A. and Starzinski-Powitz, A. (2018) Molecular and Cellular Pathogenesis of Endometriosis. *Current Women's Health Reviews*, 14, 106-116. <https://doi.org/10.2174/1573404813666170306163448>.
10. Tanbo, T. and Fedorcsak, P. (2017) Endometriosis-Associated Infertility: Aspects of Pathophysiological Mechanisms and Treatment Options. *Acta Obstetrica et Gynecologica Scandinavica*, 96, 659-667. <https://doi.org/10.1111/aogs.13082>.
11. Armour, M., Parry, K., Manohar, N., Holmes, K., Ferfolja, T., Curry, C., et al. (2019) Prevalence and Academic Impact of Dysmenorrhea in 21,573 Young Women: A Systematic Review and Meta-Analysis. *Journal of Women's Health*, 28, 1161-1171. <https://doi.org/10.1089/jwh.2018.7615>.
12. Sahin, S., Ozdemir, K., Unsal, A. and Arslan, R. (2014) Review of Frequency of Dysmenorrhea and Some Associated Factors and Evaluation of the Relationship between Dysmenorrhea and Sleep Quality in University Students. *Gynecologic and Obstetric Investigation*, 78, 179-185. <https://doi.org/10.1159/000363743>.
13. Dun, E.C., Kho, K.A., Morozov, V.V., Kearney, S., Zurawin, J.L. and Nezhat, C.H. (2015) Endometriosis in Adolescents. *Journal of the Society of Laparoscopic & Robotic Surgeons*, 19, e2015.00019. <https://doi.org/10.4293/JLSL.2015.00019>.
14. Agarwal, S.K., et al. (2019) Clinical Diagnosis of Endometriosis: A Call to Action. *American Journal of Obstetrics and Gynecology*, 220, 354.e1-354.e12. <https://doi.org/10.1016/j.ajog.2018.12.039>.
15. Casper, R.F. (2017) A Focus on the Medical Management of Endometriosis. *Fertility and Sterility*, 107, 521-522. <https://doi.org/10.1016/j.fertnstert.2017.01.008>.



16. Benagiano, G., Brosens, I. and Habiba, M. (2015) Adenomyosis: A Life-Cycle Approach. *Reproductive BioMedicine Online*, 30, 220-232. <https://doi.org/10.1016/j.rbmo.2014.11.005>.
17. Abd El-Mawgod, M.M., Alshaibany, A.S. and Al-Anazi, A.M. (2016) Epidemiology of Dysmenorrhea among Secondary-School Students in Northern Saudi Arabia. *Journal of the Egyptian Public Health Association*, 91, 115-119. <https://doi.org/10.1097/01.EPX.0000489884.20641.95>.
18. Al-Matouq, S., Al-Mutairi, H. and Al-Mutairi (2019) Dysmenorrhea among HighSchool Students and Its Associated Factors in Kuwait. *BMC Pediatrics*, 19, Article No. 80. <https://doi.org/10.1186/s12887-019-1442-6>.
19. Ibrahim, N., Al Ghamdi, M., Al-Shaibani, A., AlAmri, F., Alharbi, H., Al-Jadani, A., et al. (2015) Dysmenorrhea among Female Medical Students in King Abdulaziz University: Prevalence, Predictors, and Outcome. *Pakistan Journal of Medical Sciences*, 31, 1312-1317. <https://doi.org/10.12669/pjms.316.8752>.
20. Liisu, S., Oskari, H., Aila, T. and Paivi, H. (2016) Deep Infiltrating Endometriosis Affecting the Urinary Tract—Surgical Treatment and Fertility Outcomes in 2004-2013. *Gynecological Surgery*, 13, 435-444. <https://doi.org/10.1007/s10397-016-0958-0>.
21. Soliman, A.M., Surrey, E., Bonafede, M., Nelson, J.K. and Castelli-Haley, J. (2018) Real-World Evaluation of Direct and Indirect Economic Burden among Endometriosis Patients in the United States. *Advances in Therapy*, 35, 408-423. <https://doi.org/10.1007/s12325-018-0667-3>.
22. Takhelchangbam N, Agarwal T, Saxena D, Pathak P, Soni K, Singh NP, Jain PK. Prevalence of Dysmenorrhea, Its Effect on Class Attendance and Treatment Pattern Among Medical, Nursing and Para-Medical Female Students of a University in Etawah District. *International Journal of Healthcare Education & Medical Informatics* (ISSN: 2455-9199). 2021 Sep 30;8(3):8-13.
23. Imran I. Patterns of Dysmenorrhea and Self-management Strategies among University Students. *Pakistan Journal of Medical & Health Sciences*. 2022 Aug 17;16(07):312-.



www.mecej.com

Multi-Knowledge Electronic Comprehensive Journal For  
Education And Science Publications ( MECSJ )

Issues (65) 2023

ISSN: 2616-9185

24. Chen L, Tang L, Guo S, Kaminga A, Xu H. Primary dysmenorrhea and self-care strategies among Chinese college girls: a cross-sectional study. *BMJ Open* 2019;9(9):e026813.3.
25. Chiu M, Hsieh H, Yang Y, Chen H, Hsu S, Wang H. Influencing factors of dysmenorrhoea among hospital nurses: a questionnaire survey in Taiwan. *BMJ Open* 2017;7(12):e017615.4.
26. Chen C, Draucker C, Carpenter J. What women say about their dysmenorrhea: a qualitative thematic analysis. *BMC Women's Health* 2018;18(1): 47.
27. Abu Helwa H, Mitaeb A, Al-Hamshri S, Sweileh W. Prevalence of dysmenorrhea and predictors of its pain intensity among Palestinian female university students. *BMC Women's Health* 2018;18(1).8.
28. Bernardi M, Lazzeri L, Perelli F, Reis F, Petraglia F. Dysmenorrhea and related disorders. *F1000Res* 2017;6:1645.
29. Armour M, Parry K, Al-Dabbas M, Curry C, Holmes K, MacMillan F et al. Self-care strategies and sources of knowledge on menstruation in 12,526 young women with dysmenorrhea: A systematic review and meta-analysis. *PLoS One* 2019;14(7):e0220103.
30. Tadese M, Kassa A, Muluneh A, 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 Open* 2021;11(3): e043814.12.
31. Joshi T, Kural M, Noor N, Pandit D, Patil A. Menstrual characteristics and prevalence of dysmenorrhea in college going girls. *J Family Med Prim Care* 2015;4(3):426-31.13. Yesuf T, Eshete N, Sisay E. Dysmenorrhea among University Health Science Students, Northern Ethiopia: Impact and Associated Factors. *Int J Reprod Med* 2018; 2018:9730328
32. Kamel, D.M., Tantawy, S.A. and Abdelsamea, G.A. (2017) Experience of Dysmenorrhea among a Group of Physical Therapy Students from Cairo University: An Exploratory Study. *Journal of Pain Research*, 10, 1079-1085. <https://doi.org/10.2147/JPR.S132544>.