Content available at: https://www.ipinnovative.com/open-access-journals

IP Journal of Paediatrics and Nursing Science

Journal homepage: https://www.jpns.in/

Original Research Article

Menstrual complications in school children

Akhila Mannem[1], Shravya Rachakonda[1], Tejaswi Chillara[1,*]

[1]*Dept. of Pharmacy Practice, Vaagdevi Pharmacy College, Warangal, Telengana, India*

ARTICLE INFO

Article history:
Received 08-08-2023
Accepted 15-09-2023
Available online 21-10-2023

Keywords:
Menstruation
Dysmenorrhea
Oligomenorrhea
Menorrhagia
Hypomenorrhea
UTI

ABSTRACT

Background : Menstruation is the regular discharge of blood and mucosal tissue from the inner lining of the uterus through the vagina. It is characterized by the rise and fall of hormones. In women, various physical changes are brought about by fluctuations in hormone levels during menstrual cycle. Women may experience dysmenorrhea, amenorrhea, oligomenorrhea, menorrhagia, hypomenorrhea and UTI.
Aim: Menstrual complications in school children.
Materials and Methods: A prospective observational study was conducted for duration of 6 months, and study has been performed through an offline survey and 600 school children were recruited in our study according to inclusion criteria. By using data collection form student history was collected.
Results: The study has been performed through an offline survey and 600 school children were analysed using data collection form and student history interview. Out of 600 school individuals, students with dysmenorrhea 167(27.8%) individuals, oligomenorrhea 27(4.5%), hypomenorrhea 12(2%), anemia 1(0.1%), dysmenorrhea and anemia 7(1.1%), dysmenorrhea and menorrhagia 169(28.1%), dysmenorrhea, oligo and UTI 1(0.1%), dysmenorrhea, oligo and menorrhagia 26(5.2%), dysmenorrhea and UTI 10(1.6%), dysmenorrhea and hypomenorrhea 23(3.8%), dysmenorrhea, hypomenorrhea and anemia 2(0.3%), dysmenorrhea, oligo and anemia 2(0.3%), oligo and menorrhagia 6(1%), oligo and hypomenorrhea 37(6.1%), UTI 2(0.3%), menorrhagia 30(5%), oligo and anemia 14(2.3%).
Conclusion: With our overall six months work, we concluded that oligomenorrhea, dysmenorrhea are the most common menstrual complications in school children during menstruation. The underlined cause to these complications is lack of proper nutrition, low BMI, and poor economic status. By conducting awareness programs in schools about menstruation and diet, basic knowledge has been provided, this may reduce further menstrual complications.

1. Introduction

1.1. Menstruation

Menstruation is the dismissal of the endometrial lining of the womb. Menstruation it is of different names such as period, menses, date, menstrual period. It is normal bleeding per vaginal that happens in every month of a woman reproductive cycle. [1]

1.2. Menstrual cycle

The cycle of an adult female is 28days, some can be 22days, some can be 45 days.30-60ml of blood is passed through the vagina in the form of the menstrual fluid. During the 1-7days period it is considered as the initial phase of the menstrual cycle. [2]

* *Corresponding author*.
E-mail address: tejaswi.chillara23@gmail.com (T. Chillara).

https://doi.org/10.18231/j.ijpns.2023.018

2. Menstrual Complications

2.1. Dysmenorrhea

This term is used for painful menses or periods that might be caused by uterine shrinkage and it is stated as dysmenorrhea.[3]

2.2. Oligomenorrhea

Oligomenorrhea is the medical term for having infrequent menstrual periods. A normal menstrual cycle occurs every 28 days and lasts from four to seven days. Your period can range from every 21 days to every 35 days and still be considered normal.[4]

2.3. Menorrhagia

Menorrhagia is the medical term for menstrual periods with abnormally heavy or prolonged bleeding. Although heavy menstrual bleeding is a common concern.[5]

2.4. Hypomenorrhe

Hypomenorrhea also known as scanty menstruation is a medical condition that is characterized by extremely light flow of blood during menstruation and the duration of menstruation may be shortened also.[4]

2.5. PCOD

Polycystic ovarian syndrome, people may not get their periods monthly when they have PCOS and contain too much production of a hormone called androgens in the body. In PCOS at the outer corner of the ovary, smaller sacs of fluid may develop which are named as cysts.[6]

2.6. Urinary tract infections

A urinary tract infection is a very common type of infection in your urinary system. It can involve any part of your urinary system. Bacteria especially E. coli are the most common.[7]

3. Materials and Methods

The study has been conducted in Government schools and private schools of Hanamkonda and Warangal. A prospective observational study conducted within the period of six months. Study includes female children between the age group of 11-16 years and exclusion criteria includes less than 10 years of age group, adult women and non-menarche age group population were excluded. The data collection form includes student demographic details, age of menarche, days of menstruation, number of sanitary pads, colour while bleeding, clots while bleeding, regularity and pain in menstruation, manifestations combined with menstruation. The data was collected throughout six months from 600 school children in different schools analysed and interpreted through Microsoft excel.

4. Results

Table 1: Age wise distribution among students:

Age group	No. of students	Percentage
11	2	0.3%
12	62	10.3%
13	142	23.6%
14	181	30%
15	160	26.6%
16	53	8.8%

According to this Table 2 it shows the age distribution. Out of 600 school children our survey includes 11 years of age were 2(0.3%),12 years of age were 62(10.3%),13 years of age were 142(23.6%),14 years of age were 181(30%),15 years of age were160(26.6%),16 years of age were53(8.8%).

Table 2: Age of menarche among students:

Age of Menarche	No. of Students	Percentage
10years	20	3.3%
11years	149	24.8%
12years	176	29.3%
13years	166	27.6%
14years	72	12%
15years	15	2.5%

According to this Table 3 shows the age of menarche. Out of 600 school children 10 years of age were 20(3.3%), 11 years of age were 149(24.8%), 12 years of age were 176(29.3%), 13 years of age were 166(27.6%), 14 years of age were 72(12%), 15 years of age were 15(2.5%).

Table 3: Days of menstruation in students

Days of menstruation	Number of students	Percentage
2 days	5	0.8%
3 days	67	11.1%
4 days	82	13.6%
5 days	371	45.6%
6 days	79	13.1%
1 week	77	12.8%
8 days	15	2.5%
9 days and 3 months	1	0.1%

According to the Table 4 shows days of menstruation. Out of 600 school children, 2days were 5(0.8%), 3days were 67(11.1%), 4days were 82(13.6%), 5days were 371(45.6%), 6days were 79(13.1%), 1week were 77 (12.8%), 8 days were 15(2.5%), 9 days and 3 months were 1(0.1%), 10 days were 2(0.3%).

Table 4: Number of sanitary napkins/days used by students:

Number of sanitary napkins/days	No. of students	Percentage
1pad/day	67	11.1%
2pads/day	206	34.3%
3pads/day	200	33.3%
4pads/day	99	16.5%
5pads/day	20	3.3%
6pads/day	6	1%
7 and 8 pads/day	1	0.1%

According to Table 5 shows the number of sanitary napkins per day. Out of 600 school children, 1 pad per day was 67(11.1%),2 pads per day was 206(34.3%),3 pads per day were 200(33.3%),4 pads per day was 99(16.5%),5 pads per day was 20(3.3%),6 pads per day was 6(1%),7 pads and 8 pads per day was

Table 5: Clots while bleeding among students during menstruation:

Clots while bleeding	No. of students	Percentage
Yes	372	62%
No	228	38%

According to Table 6, shows clots while bleeding. Out of 600 school children clots while bleeding with yes-372(62%), no-228(38%).

Table 6: Colour while bleeding among students during menstruation

Colour while bleeding	No. of students	Percentage
Red	331	55.1%
Dark red	79	13.1%
Brown	63	10.5%
Reddish black	18	3%
Reddish brown	106	17.6%
Dark brown	1	0.1%
Orange brown and blue	1	0.1%

Table 7: Menstrual flow among students during menstruation:

Menstrual flow	No. of students	Percentage
Average	369	61.5%
Heavy bleeding	231	38.5%

The Table 7 shows the menstrual flow. Out of 600 school children flow of menstruation was an average was 369(61.5%), with heavy bleeding being 231(38.5%).

The Table 8 shows the white discharge chart. Out of 600 school children with curdy texture 74(12.3%), foul smell 43(7.1%), transparent 127(21.6%), thick texture 20(3.3%), yes 122(20.3%), and without white discharge 172(29.5%).

Table 8: White discharge among students during menstruation:

White discharge	No. of students	Percentage
Transparent	127	21.6%
Thick texture	127	21.6%
Foul smell	20	3.3%
Curdy texture	74	12.3%
Yes	122	20.3%
No	172	29.5%

Table 9: Regularity of menstruation in students:

Regularity of menstruation	No. of students	Percentage
Yes	379	63.1%
No	221	36.8%

The Table 9 shows the regularity of menstruation. Out of 600 school children regular menstruation was 379(63.1%), and irregular menstruation was 221(36.8%).

Table 10: Complications during menstruation among students:

Complications during menstruation	No. of students	Percentage
Dysmenorrhea	167	27.8%
Oligomenorrhea	27	4.5%
Hypomenorrhea	12	2%
Menorrhagia	30	5%
Anemia	1	0.1%
UTI	2	0.3%
Dysmenorrhea, anemia	7	4.5%
Dysmenorrhea, menorrhagia	169	28.1%
Dysmenorrhea, oligo, UTI	1	0.1%
Dysmenorrhea, oligo, menorrhagia	26	5.2%
Dysmenorrhea, UTI	10	1.6%
Dysmenorrhea, hypomenorrhea	23	3.8%
Dysmenorrhea, oligo, anemia	2	0.3%
Dysmenorrhea, hypomenorrhea, anemia	2	0.3%
Oligomenorrhea, menorrhagia	6	1%
Oligomenorrhea, hypomenorrhea	37	6.1%
Dysmenorrhea, oligo	62	10.3%
Oligo, anemia	14	2.3%
Dysmenorrhea, oligo, anemia	2	0.3%

The Table 10 shows that the complications during menstruation among students. Out of 600 school children, dysmenorrhea 167(27.8%) individuals, oligomenorrhea 27(4.5%), hypomenorrhea 12(2%), anemia 1(0.1%), dysmenorrhea and anemia 7(1.1%), dysmenorrhea and

menorrhagia 169(28.1%), dysmenorrhea, oligo and UTI 1(0.1%), dysmenorrhea, oligo and menorrhagia 26(5.2%), dysmenorrhea and UTI 10(1.6%), dysmenorrhea and hypomenorrhea 23(3.8%), dysmenorrhea, hypomenorrhea and anemia 2(0.3%), dysmenorrhea, oligo and anemia 2(0.3%), oligo and menorrhagia 6(1%), oligo and hypomenorrhea 37(6.1%), UTI 2(0.3%), menorrhagia 30(5%), oligo and anemia 14(2.3%).

Table 11: Site of pain during menstruation in students:

Site of pain	No. of students	Percentage
Lower abdomen	222	37%
Pelvic pain	105	17.5%
Lumbar pain	70	11.6%
Abdominal pain radiating to back	203	33.8%

The Table 11 shows the site of pain. Out of 600 school children' s sites of pain at the lower abdomen were 222(37%), abdominal pain radiating to the back 203(33.8%), pelvic pain105(17.5%), lumbar pain 70(11.6%).

Table 12: Manifestations during menstruation in students:

Manifestations during menstruation	No. of students	Percentage
Changing mood swings	25	4.1%
Changing mood swings and LOA	30	5%
CMS and constipation and stomach pain	4	0.6%
Inability to concentrate	84	14%
CMS and giddiness	5	0.8%
Constipation and giddiness	21	3.5%
Diarrhea and sleep disturbances	37	6.1%
Increased appetite and sleep disturbances	68	11.3%
LOA and sleep disturbances	77	12.8%
Diarrhea and increased appetite	50	8.3%
Sleep disturbances	49	8.1%
Stomach pain and constipation	103	17.1%
No symptoms	47	12.8%

The Table 12 shows that manifestations during menstruation among students. Out of 600 individuals, students are experiencing changing mood swings 25(4.1%), changing mood swings and loss of appetite 30(5%), CMS, constipation and stomach pain 4(0.6%), inability to concentrate 84(14%), CMS and giddiness 5(0.8%), constipation and giddiness 21(3.5%), diarrhoea and sleep disturbances 37(6.1%), increased appetite and sleep disturbances 68(11.3%), LOA and sleep disturbances 77(12.8), diarrhoea and increased appetite 50(8.3%), sleep disturbances 49(8.1%), stomach pain and constipation 103(17.1%) and students without symptoms are 47(7.8%).

Table 13: Economic status among students

Economic status	No. of students	Percentage
High economic status	200	33.3%
Poor economic status	400	66.6%

The Table 13 shows the economic status of school children. Out of 600 school children with poor economic status 400(66.6%), and with high economic status 200(33.3%).

Table 14: Dietary changes among students:

Dietary changes	No. of students	Percentage
Proper diet	345	57.5%
Improper diet	255	42.5%

The Table 14 shows the dietary changes. Out of 600 school children with a proper diet 345(57.5%), and with improper diet 255(42.5%).

Table 15: Awareness on menstruation among students:

Awareness on menstruation	No. of students	Percentage
Awareness	205	34.1%
Non-awareness	395	65.8%

The Table 15 shows awareness based on menstruation. out of 600 school children, 205 children are aware of menstruation (34.1%), and 395 children are not aware of menstruation (65.8%).

Table 16: Body mass index in students:

BMI	No. of students	Percentage
Low BMI	462	77%
High BMI	8	1.3%
Normal BMI	130	21.6%

The Table 16 shows that body mass index. Out of 600 school children, low BMI 462(77%) individuals, normal BMI 130(21.6%) individuals, high BMI 8(1.3%).

The Table 17 shows the others with any complications or Manifestations. Early menstruation 155(25.8%), body pains 83(13.8%), stress 32(5.3%), vomiting's 59(9.8%), headache 45(7.5%) and with PCOD 10 (1.6%).

5. Discussion

The study has been performed through an offline survey and 600 people were recruited in our study according to inclusion criteria. The data was collected in the

Table 17: Others

Others	No. of students	Percentage
Early menstruation	155	25.8%
Body pains	83	13.8%
Stress	32	5.3%
Vomiting' s	59	9.8%
Headache	45	7.5%
PCOD	10	1.6%

data collection form by interviewing the female children and their parents. our data collection form includes demographics details, age of menarche, regularity of menstruation, usage of sanitary napkins, menstrual flow, complications during menstruation, daily dietary intake, sleeping habits, economic status and manifestations during menstruation and other problems like UTI, white discharge. According to our study the occurrence of menarche is mostly between 13-15 years of age. The menstrual flow was depended upon the diet, sleep, hormonal imbalances, and other disease conditions. Children with abnormal menstrual flow were informed to their parents for gynaecologist' s opinion. We have collected data regarding sanitary pad usage during menstruation. We educated them regarding sanitary pad changing hours to prevent UTI infection and rashes. We have counselled them regarding a gynaecologist' s opinion to prevent complications like anaemia and other diseased conditions. Children with a proper diet and with high economic status with regular menstruation when compared to improper diet and poor economic status. Complications of menstruation are different types include dysmenorrhea, hypomenorrhea, oligomenorrhea, menorrhagia, anaemia, and UTI. Students are experiencing changing mood swings, inability to concentrate, loss of appetite, constipation, and stomach pain. The economic status of school children varies. Lack of awareness about menstruation is the major factor for the development of complications in children. To improve the awareness in children and family members, we have conducted the awareness programmes regarding the menstrual cycle, menstrual flow and their complications in government and private schools.

6. Conclusion

With our overall thesis work, we concluded that oligomenorrhea, dysmenorrhea are the most common menstrual complications in school children during menstruation. The underlined cause to these complications is lack of proper nutrition, low BMI, and poor economic status. By conducting awareness programs in schools about menstruation and diet, basic knowledge has been provided, this may reduce further menstrual complications.

7. Abbreviation

UTI- Urinary tract infections, BMI- Body mass index, LOC-loss of concentration, CMS- changing mood swings.

8. Acknowledgment

The author conveys my sincere regards and deep sense of gratitude to my respect guide for inspiring guidance, valuable suggestions.

9. Source of Funding

None.

10. Conflict of Interest

None.

References

1. Behera D, Sivakami M, Behera MR. Menarche and Menstruation in Rural Adolescent Girls in Maharashtra, India: A Qualitative Study. *J Health Manag*. 2015;17(4):510–9.
2. Critchley HOD, Babayev E, Bulun SE, Clark S, Grau IG, Gregersen PK, et al. Menstruation: science and society. *Am J Obstet Gynecol*. 2020;223(5):624–64.
3. Sánchez AA, Parra-Fernández ML, Onieva-Zafra MD, 1and JRP, Martínez EF. Type of Dysmenorrhea, Menstrual Characteristics and Symptoms in Nursing Students in Southern Spain. *Healthcare (Basel)*. 2020;8(3):302. doi:10.3390/healthcare8030302.
4. Shabnam O, Nasiri F. Khyrunnisa 2 A study on menstruation of Indian adolescent girls in an urban area of South India . *J Fam Med Primary Care*. 201810;7(4):698–702.
5. Mcelroy TD, Strickland JL, Phd KW, Carpenter SL. Menstrual Patterns and Treatment of Heavy Menstrual Bleeding in Adolescents with Bleeding Disorders. *J Pediatr Adolesc Gynecol*. 2015;28(6):499–501.
6. Tanton C, Nakuya K, Kansiime C, Hytti L, Torondel B, Francis SC, et al. Menstrual characteristics, menstrual anxiety and school attendance among adolescents in Uganda: a longitudinal study. *BMC Womens Health*. 2021;21(1):410.
7. Backeljauw PF, Md SR, Lawson M, Margaret MD. Clinical Management of Menstruation in Adolescent Females With Developmental Delay. *Endocrinologist*. 2004;142(2):87–92.

Author biography

Akhila Mannem, Student

Shravya Rachakonda, Student

Tejaswi Chillara, Research Guide

Cite this article: Mannem A, Rachakonda S, Chillara T. Menstrual complications in school children. *IP J Paediatr Nurs Sci* 2023;6(3):101-105.