International Journal of Health Sciences and Research
[Indexed, Peer-Reviewed Journal]
Volume 15; Issue: 4; April 2025
Website: www.ijhsr.org
Original Research Article *ISSN: 2249-9571*

Dysmenorrhea and Menstrual Hygiene Practices among Adolescent Girls in a Selected School of Nuwakot, Nepal

Gita Dhakal Chalise[1], Drishya Puri[2], Roja Kunwar[3]

[1]Associate Professor, College of Nursing, Nepalese Army Institute of Health Sciences, Kathmandu, Nepal.
[2] A level student, St, Xavier's College, Kathmandu, Nepal.
[3] B.Sc. Nurse, Tribhuvan University Teaching Hospital, Kathmandu, Nepal. Email:

Corresponding Author: Gita Dhakal Chalise

DOI: https://doi.org/10.52403/ijhsr.20250442

ABSTRACT

Introduction: Dysmenorrhea or painful menstruation is a prevalent issue among adolescent girls which may have severe lasting impacts on an adolescent's life. Menstrual hygiene is very important issue among them; however, it is still a neglected area of concern in many parts of the world including Nepal. The objective of this study was to find out the prevalence of dysmenorrhea and menstrual hygiene practices among secondary-level female students.
Materials and Methods: A descriptive cross-sectional study was carried out among 182 girls of grade 11 and 12 at Tribhuwan Trisuli Higher Secondary School in Nuwakot. The study area was selected purposively, and the study samples were selected using random number table. A semi-structured, self-administered questionnaire was used for data collection. Descriptive statistics such as frequency, percentage, mean, standard deviation and inferential statistical methods i.e. Chi-square test ($\chi 2$) were used for data analysis.
Results: The study revealed that most (93.4%) of the respondents experienced dysmenorrhea and among them, 28% used to experience worst level of menstrual pain. Similarly, more than half (53.3%) of the respondents had good menstrual hygiene practices whereas, 46.7% had poor practices. The study also indicates that there is significant association of menstrual hygiene practice with respondents' age (p-value 0.029).
Conclusions: The study concludes that dysmenorrhea is prevalent among adolescent girls and half of them had good menstrual hygiene practices. Furthermore, menstrual hygiene practice tends to be associated with their age. Therefore, specific school-based interventions are necessary for the management of dysmenorrhoea and improvement of menstrual hygiene practice among adolescent girls.

Key words: Dysmenorrhea, Menstrual Hygiene Practices, Adolescent Girls

INTRODUCTION

Adolescence is the intermediate phase of an individual's life between the age of 10-19 years which is marked by several physiological changes among girls including the onset of menstruation or menarche.[1] Menstruation is the cyclic bleeding during which they may experience several symptoms.[2,3] One of such prominent symptom is the pain, often referred to as dysmenorrhea.[4] It can have severe lasting impacts on an adolescent's life as

individuals sometimes suffer from excruciating pain that can last for two or three days, interrupting their daily routine and adversely affecting their quality of life.[5] For instance, 27.5% of the girls in Nepal missed school due to menstrual pain and more than 50% of the girls were unable to continue their day-to-day activities.[6]

Another primary issue surrounding menstruating girls is the practice of poor menstrual hygiene caused mainly by a lack of education instigated by social taboos.[7] More than 50% of the girls in low and middle-income countries do not abide by satisfactory menstrual hygiene practices.[8] Moreover, nearly half of the adolescent girls still use absorbent clothes instead of sanitary pads in rural areas of Ethiopia.[9] Most of the girls who use cloth as absorbents do not tend to wash these clothes with soap and properly dry them afterward in the sun.[10] Such poor practices of menstrual hygiene might lead to an increased risk of various reproductive tract infections including cervical cancer. Dysmenorrhea and poor hygiene practices also increase the risk of school drop-out, low self-esteem, and unsatisfactory academic performance.[11]

In order to minimize the problems faced by adolescents during their menstrual period, it is essential to study problems and issues revolving around dysmenorrhea and menstrual hygiene practices. Therefore, this study aims to identify the prevalence of dysmenorrhea and menstrual hygiene practice among adolescents of a selected school.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted at Tribhuwan Trisuli Higher Secondary School, a government school in Trisuli, Nuwakot among female students of grades 11 and 12. Students who had already experienced menarche, present at the time of data collection and willing to participate in the study were included. Using a simple random sampling method, 182 girls were selected from four different academic programs i.e., Science, Management, Humanities, and Education. Sample size was calculated by using Cochran's formula where the prevalence of dysmenorrhea i.e., 87.5% was taken from the study "Prevalence and Predictors of Dysmenorrhea"[12] with confidence interval at 95% and 5% margin of error.

Ethical approval was taken from the Institutional Review Committee (IRC) of the Nepalese Army Institute of Health Sciences (Ref. No. 245). Informed written consent for the study was obtained from the principal and informed written assent was obtained from each respondent prior to data collection. Anonymity was maintained by asking students not to write their names on questionnaire.

A semi-structured questionnaire was used for data collection which consisted of three parts i.e., socio-demographic information, questions related to menstruation and dysmenorrhea and statements related to menstrual hygiene practices. Data was collected by researcher herself using self-administration technique. Statistical Package for the Social Science (SPSS) version 20 was used to analyze findings. Descriptive statistics such as frequency, percentage, mean, standard deviation and inferential statistical methods i.e. Chi-square test (χ^2) were used for data analysis.

RESULTS

In this study, majority (65.93%) of the respondents were below the age of 18 years (mean ± SD= 17.18±1.033). Nearly two-thirds (63.8%) of the respondents were Janajati, 61.0% were Hindus and 37.9% of the respondents lived in nuclear family (table 1).

More than three-fourth (69.7%) of the respondents had menarche below the age of 14 years and were menstruating regularly. Most (82.4%) of the respondents' duration of menstrual blood flow was more than 4 days in each cycle. All of the respondents used sanitary pads during menstruation. No one had practice of using absorbent cloth, menstrual cup and tampons. More than half (52.2%) of the respondents had history of

dysmenorrhea in their family and 66.3% of them had history of dysmenorrhea in mother (table 2).

Most (93.4%) of the respondents experienced dysmenorrhea and among them, 30.0% experienced worst level of menstrual pain. Most (80.0%) of the respondents experienced menstrual pain for ≤3 days. Regarding the symptoms of dysmenorrhea, 70.0% of the respondents experienced backache. Likewise, 42.4% of the respondents shared about their menstrual pain with friends and mother respectively, and more than half (57.6%) of the respondents were absent in school due to dysmenorrhea (table 3).

One-fourth (27.1%) of the respondents sought medical advice for menstrual pain and among them, 60% had taken medical advice from nurses. Most (80.6%) of the respondents had not taken self-medicine for menstrual pain. Regarding the home management of dysmenorrhea, 95.3% of the respondents took rest and 36.5% respondent consumed tea and hot liquids (table 4).

Almost all (98.9%) of the respondents washed their hands before and after using menstrual products. Most (81.3%) of the respondents changed their sanitary pads every 4 hours. Most (82.4%) of the respondents wear light weight, breathable clothing and 90.7% of the respondents cleaned their genital area in every toilet visit during menstruation. Most (76.9%) of the respondents felt safe while changing menstrual materials at school. More than half (54.9%) of the respondents told that teacher/ school health nurse did not give them regular education on safe menstrual practices (table 5).

More than half (53.3%) of the respondents had good level of menstrual hygiene practices whereas, (46.7%) of the respondents had poor level of menstrual hygiene practices (table 6). There was significant association of the level of menstrual hygiene practices with age (p-value 0.029). But there was no significant association of the level of menstrual hygiene practices with religion, ethnicity, educational level and occupation of parents with (table 7).

TABLE 1 Socio-demographic Information of the Respondents. n = 182

Variables	Number	Percent
Age (in years) *		
<18 years	120	65.93
≥18 years	62	34.07
Ethnicity		
Dalit	6	3.3
Janajati	116	63.8
Madhesi	1	0.5
Brahmin/Chhetri	59	32.4
Religion		
Hinduism	111	61.0
Buddhism	47	25.8
Christianity	24	13.2
Islam	-	-
Family Type		
Nuclear	69	37.9
Joint	54	29.7
Extended	59	32.4

Mean age ± SD=17.18 ±1.033

TABLE 2 Menstruation related Information of the Respondents

Variable	Number	Percent
Age at menarche (n=182)		
<14 years	127	69.7

≥14 years	55	30.3
Menstrual cycle pattern (n=182)		
Regular	127	69.7
Irregular	55	30.3
Duration of menstrual blood flow in each period (n=182)		
<4 days	32	17.6
≥4 days	150	82.4
Kind of menstrual material used (n=182)		
Sanitary pads	182	100.0
Absorbent clothes	-	-
Tampons	-	-
Menstrual cup	-	-
History of dysmenorrhea in family (n=182)		
Yes	95	52.2
No	87	47.8
If yes, to whom (n=95)		
Mother	63	66.3
Sister	28	29.4
Maternal aunt	1	1.1
Others	3	3.2

TABLE 3 Dysmenorrhea related Information of Respondents

Variables	**Number**	**Percent**
Experience of dysmenorrhea during periods (n=182)		
Yes	170	93.4
No	12	6.6
Level of menstrual pain (n=170)		
Mild pain	34	20.0
Moderate pain	28	16.5
Severe pain	32	18.8
Very severe pain	25	14.7
Worst pain	51	30.0
Duration of menstrual pain (n=170)		
≤3 days	136	80.0
>3 days	34	20.0
Other symptoms experienced in dysmenorrhea* (n=170)		
Backache	119	70.0
Mood swings	96	56.5
Tiredness	90	52.9
Thigh and leg pain	49	28.8
Irritability	40	23.5
Headache	35	20.6
Fullness of breast	25	14.7
Loss of appetite	16	9.4
Nausea and vomiting	14	8.2
Altered bowel habit	8	4.7
Share about menstrual pain with (n=170)		
Friends	72	42.4
Mother	72	42.4
None	26	15.2
School nurse	-	-
Teacher	-	-
Been absent in school due to dysmenorrhea (n=170)		
Yes	98	57.6
No	72	42.4

Multiple responses

TABLE 4 Management of Dysmenorrhea among Respondents

Variables	Number	Percent
Sought medical advice for menstrual pain (n=170)		
Yes	46	27.1
No	124	72.9
If yes, from whom (n=46)		
Nurse	28	60.8
Physician	9	19.6
Gynecologist	4	8.7
Paramedics (HA, AHW)	4	8.7
Pediatrician	1	2.2
Use self-medicine for menstrual pain (n=170)		
Yes	33	19.4
No	137	80.6
Management of dysmenorrhea at home* (n=170)		
Rest	162	95.3
Tea/hot liquid consumption	62	36.5
Listen to songs	48	28.2
Watch movies	29	17.1
Hot application	27	15.9
Take hot shower	19	11.2
Exercise	8	4.7
Use abdominal binder	5	2.9
Yoga/Meditation	2	1.2

Multiple responses

TABLE 5 Menstrual Hygiene Practices among Respondents. n=182

Variables	Yes		No	
	Number	Percent	Number	Percent
Hand washing				
Wash hands before and after using menstrual products.	180	98.9	2	1.1
Able to get the menstrual materials I most wanted to use.	168	92.3	14	7.7
Use of sanitary pads				
Change sanitary pads every 4 hours, no matter how light the flow.	148	81.3	34	18.6
Discard used pads in a dust/trash bin by wrapping them with paper or other materials.	176	96.7	6	3.3
Others				
Wear light weight, breathable clothing (such as cotton underwear).	150	82.4	32	17.6
Clean genital area in every toilet visit during menstruation.	165	90.7	17	9.3
Take daily bath with soap and water during menstruation.	117	64.3	65	35.7
Drink enough liquid.	141	77.5	41	22.5
Menstrual hygiene practice at School				
School has a separate clean place/toilet for girls where I can change my menstrual materials.	114	62.6	68	37.4
Feel safe while changing menstrual materials at school.	140	76.9	42	23.1
School has separate bins to dispose menstrual materials.	133	73.1	49	26.9
School has enough water in washrooms.	98	53.8	84	46.2
Teachers/school health nurse give regular education on safe menstrual practices.	82	45.1	100	54.9

TABLE 6 Level of Menstrual Hygiene Practices

Level	Number	Percent
Poor (≤50%)	85	46.7
Good (>50%)	97	53.3
Total	**182**	**100**

TABLE 7 Association of Level of Menstrual Hygiene Practices with Selected Socio-demographic Variables of Respondents

Variables	Level of Menstrual Hygiene Practices		Chi-square value	*p*-value
	Good (n=97)	Poor (n=85)		
	No. (%)	No. (%)		
Age (in years)				
<18	57 (47.5)	63 (52.5)	4.755	0.029*
≥18	40 (67.7)	22 (32.3)		
Religion				
Hinduism	58 (52.2)	53 (47.8)	0.133	0.936
Buddhism	26 (55.3)	21 (44.7)		
Christianity	13 (54.2)	11 (45.8)		
Ethnicity				
Janajati	63 (54.3)	53 (45.7)	0.132	0.716
Others	34 (51.5)	32 (48.5)		
Educational level of father				
Illiterate	19 (63.3)	11 (36.7)	1.454	0.228
Literate	78 (51.3)	74 (48.7)		
Educational level of mother				
Illiterate	38 (59.3)	26 (40.7)	1.465	0.226
Literate	59 (50)	59 (50)		
Occupation of father				
Government job	7 (53.9)	6 (46.1)	0.044	0.978
Farmer	39 (54.2)	33 (45.8)		
Others	51 (52.6)	46 (47.4)		
Occupation of mother				
House manager	66 (54.6)	55 (45.4)	5.006	0.081
Farmer	22 (62.9)	13 (37.1)		
Others	9 (34.7)	17 (65.3)		

statistically significant p- value

DISCUSSION

In the present study, most (93.4%) of the respondents experienced dysmenorrhea, and among them, 30.0% experienced the worst level of menstrual pain. Similar findings were reported by a study in Indonesia which showed that 80.8% experienced moderate to severe dysmenorrhea where 25.8% reported pain of highest intensity.[5] These findings are also consistent with another study which reported that 66.1% of participants had experienced dysmenorrhea with 9.6% reporting mild pain, 34.9% reporting moderate pain, and 21.6% reporting severe pain.[13]

In the present study, most (80.0%) of the respondents experienced menstrual pain for less than and equal to 3 days. Regarding the other symptoms of dysmenorrhea, 70.0% of the respondents experienced backache and 56.5% experienced mood swings during menstruation. A similar study in Kuwait documented that more than half of the participants with dysmenorrhea had pain for 1 to 2 days where the most common site for pain was the lower abdomen.[14] Another study in Pakistan indicated that 31% reported back pain, 28.8% reported abdominal pain and 24.9% reported general weakness. [15]

In the current study, 42.4% of the respondents shared their menstrual pain with friends and mother respectively. More than half (57.6%) of the respondents had been absent in school due to dysmenorrhea. Similarly, in Chandigarh, India, nearly one-third (32.7%) of girls reported absenteeism from school during their periods where the most common reasons for absenteeism were pain, discomfort, or tiredness.[16] Similar findings were reported by other studies which showed that about one-fourth (28.1% and 24.45%) of girls said that abdominal pain, fear of bad smell and fear of staining in clothes interfered with going to school/office.[10,16] On the contrary, a study in

Pakistan reported that 61.5% didn't miss school due to menstruation. However, 53.2% sometimes missed other activities in this period. [15]

In the present study, only 27.1% of the respondents have sought medical advice for menstrual pain and 60.8% had taken medical advice from nurses. Regarding the home management of dysmenorrhea, 95.3% of the respondents took rest and 36.5% respondents consumed tea and hot liquids. These findings are supported by a similar study in Kuwait that shows that 26% of the participants with dysmenorrhea had visited a public or private clinic because of their pain among which, 4.1% were hospitalized for the management of their menstrual pain.[14] Similar study in Pakistan reported that 68.5% didn't take any medication for the associated problems and rest was taken by 67.8% for management of dysmennorhea.[15]

In the present study, all of the respondent used sanitary pads during menstrual periods and no one used absorbent cloth, menstrual cup and tampons. Four-fifth (81.3%) of the respondents changed their sanitary pads every 4 hours and 96.7% of the respondents discarded their used pads in a dust/trash bin by wrapping them with paper or other materials. These findings are supported by studies where majority of girls (93.8 %, 82.1% 88.01%, respectively) used sanitary pads during periods.[6,10,13] Other studies in Nepal reported that 97.4% and 83.7% of the respondents respectively disposed used pads in dustbins after wrapping.[6,17] Our findings align with the results of many other studies where most of the respondents (66.78% and 43.6%,) changed pads at least three times or more than twice a day.[13,18,] Contrary finding regarding disposal of absorbent was reported by another study, where most (64.5%) of the girls burned their absorbent pads.[18]

In the present study, almost all (98.9%) of the respondents washed their hands before and after using menstrual products. More than four-fifth (82.4%) of the respondents wore light weight, breathable clothing, almost all (90.7%) of the respondents cleaned their genital area in every toilet visit during menstruation and majority (64.3%) of the respondents took daily bath with soap and water during menstruation. These findings are supported by the study conducted in Chitwan, Nepal where 95.9% used soap and water to wash their hand after pad change, 94.8% cleaned genitalia properly and 64.2% of the respondents took bath daily during menstrual period.[6] Other studies reported that almost all of the respondents (96.6%, 94.86%) cleaned their private parts after changing their absorbent material and after every toilet visit.[10,13] A Study in South India demonstrated all (100%) of girls took bath daily while menstruating which is greater than the findings reported by current study.[18] In contrast, a study in Dang, Nepal shows that only 16.5% of the school girls took daily bath during menstruation.[17]

In the current study, most (76.9%) of the respondents felt safe while changing menstrual materials at school, more than half (53.8%) of the respondents told that their school had enough water in washrooms and more than half (54.9%) of the respondents' teacher/ school health nurse did not give them regular education on safe menstrual practices. These findings are supported by a similar study in South India which showed that schools had separate bathroom for girls, adequate privacy with continuous supply of water with none of the girls facing issues with hygiene management at school.[18]

In the present study, more than half (53.3%) of the respondents had good menstrual hygiene practices followed by poor menstrual hygiene practices among 46.7% respondents. Somewhat consistent findings were reported in similar studies conducted in Nepal where around two-thirds of the respondents (72.5%, 67.0%,) had good menstrual hygiene practice.[6,17] In contrary, a study in Southern Ethiopia reported that overall menstrual hygiene practice was found good among only 39.7% of the respondents and poor among 60.3% of the respondents.[9]

In present study, there was significant association of the level of menstrual hygiene practices with respondent's age (p-value 0.029) but there was no significant association of the level of menstrual hygiene practices with religion, ethnicity, educational level and occupation of parents. Similar study documented that hygienic practices were not influenced by the type of school or socio-demographic characteristics.[18]

CONCLUSION

The study concludes that dysmenorrhea is prevalent problem among adolescent girls during menstruation. Menstrual hygiene practice was good among half of the adolescent girls and nearly half of them had poor menstrual hygiene practice. Furthermore, menstrual hygiene practice tends to be influenced by the age of the respondents.

Declaration by Authors

Ethical Approval: Approved
Acknowledgement: None
Source of Funding: None
Conflict of Interest: None

REFERENCES

1. World Health Organisation. Factsheet on Adolescent health. Geneva: WHO. c2013. Available at: http://www.who.int/topics/adolescent_health/en/ Accessed on 4 April 2017.
2. Marques P, Madeira T, Gama A. Menstrual cycle among adolescents: girls' awareness and influence of age at menarche and overweight. Revista Paulista de Pediatria. 2022 Jan 5;40: e2020494.
3. American College of Obstetricians and Gynecologists. reVITALize: gynecology data definitions. Available at: https://www.acog.org/practicemanagement/health-it-and-clinical-informatics/ revitalize-gynecology-data-definitions
4. Nagy H, Carlson K, Khan MA. Dysmenorrhea. In StatPearls [Internet] 2023 Nov 12. StatPearls Publishing.
5. Ariyanti L, Kusumaningayu WA, Prabandari FI, Ramadhani AN. Dysmenorrhea and Practice of Menstrual Hygiene in Adolescent Females. Gaster. 2024 Feb 23;22(1):25-33.
6. Neupane MS, Sharma K, Bista AP, Subedi S, Lamichhane S. Knowledge on menstruation and menstrual hygiene practices among adolescent girls of selected schools, Chitwan. Journal of Chitwan Medical College. 2020 Mar 15;10(1):69-73.
7. Sharma S, Mehra D, Kohli C, Singh MM, Shantanu S, Mehra D. Menstrual hygiene practices among adolescent girls in a resettlement colony of Delhi: a cross-sectional study. Int J Reprod Contracept Obstet Gynecol. 2017 May 1;6(5):1945-51.
8. Hennegan J, Montgomery P. Do menstrual hygiene management interventions improve education and psychosocial outcomes for women and girls in low- and middle-income countries? A systematic review. PloS One. 2016 Feb 10;11(2): e0146985.
9. Belayneh Z, Mekuriaw B. Knowledge and menstrual hygiene practice among adolescent school girls in southern Ethiopia: a cross-sectional study. BMC public health. 2019 Dec; 19:1-8.
10. Deepa S, Agrawal T, Attokaran T, Fathima FN, Johnson AR. Awareness, perceptions and practices regarding menstruation and menstrual hygiene among students of a college in Bengaluru Urban district, South India: a cross-sectional study. International Journal of Community Medicine and Public Health. 2019 Feb 22;6(3):1126.
11. Bank W. Menstrual Hygiene Management Enables Women and Girls to Reach theirFull Potential [Internet]. Washington, DC: Word Bank; 2018 [cited 2022 Feb 06].
12. Sigdel D, Joshi A, Thapa T, Koirala P, Sharma K. Prevalence and predictors of dysmenorrhoea and its effects among adolescent girls in Chitwan, Nepal. Journal of Chitwan Medical College. 2023 Mar 30;13(1):15-23.
13. Chuwa AH. Impact of dysmenorrhea on urban school girls in Tanzania: the need for a comprehensive menstrual health management guideline. International Journal of Community Medicine and Public Health. 2024 May;11(5):1777
14. Al-Matouq S, Al-Mutairi H, Al-Mutairi O, Abdulaziz F, Al-Basri D, Al-Enzi M, Al-Taiar A. Dysmenorrhea among high-school students and its associated factors in Kuwait. BMC pediatrics. 2019 Dec; 19:1-2.

15. Michael J, Iqbal Q, Haider S, Khalid A, Haque N, Ishaq R, Saleem F, Hassali MA, Bashaar M. Knowledge and practice of adolescent females about menstruation and menstruation hygiene visiting a public healthcare institute of Quetta, Pakistan. BMC women's health. 2020 Dec; 20:1-8.
16. Ahuja A, Sharma MK, Singh A. Impact of dysmenorrhea on quality of life of adolescent girls of Chandigarh. J Child Adolesc Behav. 2016 May 24;4(295):2.
17. Bhusal CK. Practice of menstrual hygiene and associated factors among adolescent school girls in Dang district, Nepal. Advances in preventive medicine. 2020;2020(1):1292070.
18. Chauhan P, Shaik RA, Anusha DV, Sotala M. A study to assess knowledge, attitude, and practices related to menstrual cycle and management of menstrual hygiene among school-going adolescent girls in a rural area of South India. Int J Med Sci Public Health. 2019 Jan;8(2):114-119

How to cite this article: Gita Dhakal Chalise, Drishya Puri, Roja Kunwar. Dysmenorrhea and menstrual hygiene practices among adolescent girls in a selected school of Nuwakot, Nepal. *Int J Health Sci Res.* 2025; 15(4):290-298. DOI: *https://doi.org/10.52403/ijhsr.20250442*

******