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Quality of Life and Self-Care Behavior Related to Dysmenorrhea among Adolescent Girls in Pokhara, Nepal

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Keywords

Adolescents, Dysmenorrhea, Menstrual health, Quality of life, Self-care behavior

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ABSTRACT

Menstrual-related problems are common during adolescence, especially after menarche. Dysmenorrhea is one of the most common complaints and can negatively affect daily activities, emotional health, and overall quality of life. However, many adolescents manage symptoms through home remedies and self-care practices instead of seeking professional healthcare. The present study was conducted to examine the quality of life and self-care behavior among adolescents experiencing dysmenorrhea in Pokhara. A quantitative descriptive cross-sectional study design was adopted for the research. A quantitative descriptive cross-sectional study was conducted among 206 adolescent girls selected through total enumeration sampling. Data were collected using a structured self-administered questionnaire and analyzed using the Statistical Package for Social Sciences (SPSS) version 16.0. Data analysis was carried out using the Statistical Package for Social Sciences (SPSS) version 16.0. The average age of the participants was 14.66±0.65 years. Dysmenorrhea was reported by 74.3% of respondents, among whom 63.4% experienced moderate pain. Reduced quality of life was observed in 62.1% of participants, while 48.4% demonstrated poor self-care behavior. Significant associations were found between dysmenorrhea and age at menarche ($p = 0.050$), amount of menstrual bleeding ($p = 0.023$), passage of blood clots ($p = 0.007$), and family history of dysmenorrhea ($p = 0.031$). The findings indicate that dysmenorrhea remains a major health concern among adolescents and is often inadequately managed. Strengthening menstrual health education and promoting appropriate self-care strategies within school settings may help adolescents manage menstrual discomfort more effectively and improve their overall quality of life.

Introduction

Adolescence is an important developmental stage marked by profound biological, emotional, cognitive, and social transformations. This phase, generally occurring between the ages of 10 and 19 years, represents the transition from childhood to adulthood and is strongly influenced by puberty-related changes (Health Organization [WHO], 2021). During this period, adolescents experience rapid physical growth, hormonal alterations, and the development of secondary sexual characteristics. In girls, one of the most notable physiological milestones is menarche, which indicates the initiation of reproductive maturity and menstrual function.

Menstruation is a naturally occurring physiological process involving cyclical shedding of the uterine lining. Although it is a normal aspect of female reproductive health, many adolescent girls experience menstrual-related difficulties that can negatively affect their daily lives. Common problems include irregular menstruation, excessive bleeding, and dysmenorrhea, with dysmenorrhea being one of the most frequently reported gynecological complaints among adolescents (Ameade et al., 2018; Baidhya & Paneru, 2020). Dysmenorrhea is characterized by painful menstrual cramps, usually concentrated in the lower abdomen, and may also be associated with symptoms such as nausea, fatigue, headache, dizziness, vomiting, and lower back pain (Ameade et al., 2018). The condition is largely linked to elevated prostaglandin secretion, which increases uterine contractions and decreases uterine blood supply, thereby intensifying pain sensation (Iacovides et al., 2015).

Dysmenorrhea is commonly categorized as either primary or secondary. Primary dysmenorrhea occurs without identifiable pelvic pathology and is especially common during adolescence and early adulthood. In contrast, secondary dysmenorrhea develops as a result of underlying gynecological disorders such as endometriosis or pelvic inflammatory disease (Iacovides et al., 2015). Previous studies have demonstrated considerable variation in the prevalence of dysmenorrhea across different countries and populations, with reported rates ranging from approximately 15% to nearly 90% (Ameade et al., 2018). Higher prevalence rates are consistently observed among adolescent girls, particularly in South Asian settings. In Nepal, studies have reported prevalence rates exceeding 70% among school and college-going adolescents (Baidhya & Paneru, 2020; Katuwal et al., 2016).

The effects of dysmenorrhea extend beyond physical pain and can substantially influence the quality of life of adolescents. Menstrual pain frequently interferes with academic activities, social participation, and routine physical functioning. Many adolescents experiencing dysmenorrhea report school absenteeism, reduced classroom concentration, diminished academic performance, and withdrawal from sports or recreational activities (Schoep et al., 2019). In addition to physical discomfort, dysmenorrhea has been associated with emotional disturbances, including irritability, anxiety, stress, and mood fluctuations, which may further impair psychological well-being (Fernández-Martínez et al., 2019). Consequently, dysmenorrhea can create multidimensional challenges that affect both educational achievement and social engagement during adolescence.

To relieve menstrual discomfort, adolescent girls practice various self-care strategies that include both pharmacological and non-pharmacological measures. Frequently used non-pharmacological approaches include rest, application of heat, massage, relaxation techniques, exercise, and herbal remedies, whereas pharmacological management mainly involves non-steroidal anti-inflammatory drugs (NSAIDs) and other pain-relieving medications (Gebeyehu et al., 2017). However, evidence suggests that many adolescents prefer home-based remedies and self-management practices instead of consulting healthcare professionals (Nwozichi et al., 2015). Cultural beliefs, embarrassment, inadequate awareness, and limited access to adolescent-friendly reproductive health services may contribute to low healthcare-seeking behavior regarding menstrual problems.

Although dysmenorrhea is highly prevalent and significantly affects adolescent well-being, it continues to receive limited attention in many developing countries, including Nepal. Menstrual pain is often normalized within families and communities, leading many adolescents to tolerate symptoms without seeking appropriate medical support (Baidhya & Paneru, 2020). Existing literature from Nepal and other countries has consistently shown that dysmenorrhea adversely affects quality of life, emotional health, academic performance, and social participation (Hashim et al., 2020; Schoep et al., 2019). Nevertheless, studies examining the combined relationship between dysmenorrhea, quality of life, and self-care behavior among adolescents in Pokhara remain limited.

Therefore, the present study aims to assess the quality of life and self-care behavior among adolescents experiencing dysmenorrhea in Pokhara. The study seeks to determine the prevalence of dysmenorrhea, evaluate its influence on daily living and well-being, and identify commonly practiced self-care measures among adolescent girls. The findings are expected to contribute to a better understanding of adolescent menstrual health and support the development of appropriate educational and health intervention programs aimed at improving the quality of life of adolescent girls.

Materials and Methods

A quantitative descriptive crosssectional study was conducted at St. Mary's Higher Secondary School, Nayagaun, Pokhara, over a period of seven weeks. This design was chosen to assess the prevalence of dysmenorrhea and its associations with quality of life and selfcare behavior at a single point in time. Data were collected during November 2021 in classrooms at St. Mary's Higher Secondary School. Among 224 eligible students, 206 participated, giving a response rate of 92%; nonresponse was due to absenteeism or refusal. Written informed consent was obtained from parents or guardians, and assent was taken from each participant. Ethical clearance was secured from the Institutional Research Committee of Manipal Teaching Hospital, and permission was granted by the school administration. As the participants were minors, special ethical safeguards were followed: voluntary participation, the right to withdraw at any time, strict confidentiality through anonymous coding, and adherence to COVID19 safety measures (mask use, distancing, hand hygiene).

Description of Data Collection Tools

This study used a questionnaire for data collection, which was organized into five separate sections, i.e., i) sociodemographic information, (ii) anthropometric measurements (height and weight), (iii) menstrual history, (iv) quality of life, and (v) selfcare behavior. The first section gathered socio-demographic information, including participants' age, ethnicity, family structure, monthly household income, and the educational background of parents. The second section focused on anthropomet-

ric measurements, where height and weight were measured and recorded by the researcher. Information related to menstrual history was included in the third section, covering variables such as age at menarche, menstrual regularity, volume of menstrual flow, passage of blood clots, family history of dysmenorrhea, and accompanying menstrual symptoms. The fourth section evaluated the quality of life of the participants using an adapted form of the Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF) developed by John Endicott and colleagues (Endicott et al., 1993). Some culturally inappropriate items were omitted, while additional aspects considered relevant to adolescents, including self-confidence and perceived social support, were incorporated into the tool. This section consisted of 14 statements rated on a five-point Likert scale (very poor, poor, fair, good, and very good), and the total scores were later classified into categories representing normal or reduced quality of life.

The fifth section assessed self-care behavior during dysmenorrhea using a self-structured questionnaire consisting of 14 items. Responses were measured on a three-point scale (always, sometimes, and never), and scoring was categorized into good and poor self-care behavior based on a 50% cutoff point.

Data Collection Procedure

Data collection was carried out after receiving ethical clearance from the Institutional Research Committee of Manipal Teaching Hospital. Written informed consent was obtained from parents/guardians, and assent was taken from each participant before initiating the study. Data were collected using a structured self-administered questionnaire distributed to eligible students in their classrooms. Participants generally required approximately 20–25 minutes to complete the questionnaire. Confidentiality and anonymity were ensured by coding responses and restricting access to raw data.

Data Processing and Analysis

The collected data was analyzed using descriptive as well as inferential statistical methods. Descriptive measures, including frequency distribution, percentage, mean, and standard deviation, were applied to present and summarize the characteristics of the data. To examine possible relationships among dysmenorrhea, quality of life, and self-care behavior, inferential analysis was performed using the chi-square test. The data were analyzed using different statistical tools based on the objectives and hypothesis of the study, employing the Statistical Package for Social Sciences (SPSS) version 16.

Results

Analysis and interpretation of the data were based on data collected through the semi-structured questionnaire from 206 students of St. Marys School, Pokhara.

Among the respondents, the majority (62.6%) were studying in grade 9, whereas the smallest proportion (9.7%) belonged to the age group of 16 years. More than half of the participants (55.5%) were from relatively advantaged Janajati communities. Regarding family structure, 35.9% of the students reported living in joint families. Most respondents (86.9%) had a monthly family income exceeding Rs. 20,000. In terms of parental education, 41.7% of fathers and 39.8% of mothers had attained a bachelor's degree or higher level of education (Table 1). The majority of students (67.0%) fell within the normal BMI range of 18.5–24.9 kg/m² (Table 2).

Table 1

Frequency and Socio-Demographic Characteristics of the Respondents ($n = 206$)

Sample Characteristics	Frequency	%
Class		
9	129	62.6
10	77	37.4
Age (years)		
14	93	45.1
15	93	45.1
16	20	9.7
Mean ± S.D. = 14.66 ± 0.65		
Ethnicity		
Dalit	6	2.9
Disadvantaged Janajati	3	1.5
Relatively advantaged Janajati	115	55.8
Upper caste groups	82	39.8
Type of family		
Nuclear	130	63.1
Joint	74	35.9
Extended	2	1.0
Family income per month in NPR		
$< 10,000$	1	0.5
10,000–15,000	8	3.9
15,000–20,000	18	8.7
$> 20,000$	179	86.9
Education of father		
Illiterate	2	1.0
Can read and write	11	5.3
Primary	2	1.0
Secondary	24	11.7
Higher secondary	81	39.3
Bachelor and above	86	41.7
Education of mother		
Illiterate	2	1.0
Can read and write	11	5.3
Primary	4	1.9
Secondary	43	20.9
Higher secondary	82	39.8
Bachelor and above	64	31.1

Table 2

Frequency and Percentage of BMI of the Respondents ($n = 206$)

BMI	Frequency	%
Underweight < 18.5	35	17.0
Normal 18.5–24.9	138	67.0
Overweight 25–29.9	17	8.3
Obese > 30	16	7.8

Table 3

Frequency and Percentage of Menstrual Characteristics of the Respondents ($n = 206$)

Menstrual Characteristics	Frequency	%
Age of menarche (years)		
11	93	45.1
12	60	29.1
13	42	20.4
14	11	5.3
Regularity of menstrual cycle		
Yes	123	59.7
No	83	40.3
Length of menstrual cycle (days)		
< 21	30	14.6
21 to 35	137	66.5
> 35	39	18.9
Days of bleeding		
1 to 3 days	29	14.1
4 to 7 days	163	79.1
More than 7 days	14	6.8
Amount of bleeding		
Little	6	2.9
Moderate	174	84.5
Heavy	26	12.6
Passage of clots		
Yes	150	72.8
No	56	27.2

Table 3 shows the menstrual characteristics of 206 students. Statistically, 45.1% of the studied girl experienced their menarche at the age of 11 years. Half of them (59.7%) had regular menstrual cycles. More than half (66.5%) had 21 to 35 day menstrual cycle. Two-thirds of them (79.1%) had bleeding for 4 to 7 days. The majority of students (84.5%) experience moderate bleeding. Only one-third of the students (27.2%) didn't pass the blood clots.

Table 4

Frequency and Percentage of Dysmenorrhea and Associated Characteristics of the Respondents ($n = 206$)

Menstrual Characteristics	Frequency	%
Dysmenorrhea		
Yes	153	74.3
No	53	25.7
Level of pain ($n = 153$)		
Mild	23	15.0
Moderate	97	63.4
Severe	33	21.6
Family history of dysmenorrhea		
Yes	51	24.8
No	48	23.3
Don't know	107	51.9
Associated symptoms		
Reduced appetite: Yes	55	26.7
Reduced appetite: No	151	73.3
Nausea/vomiting: Yes	15	7.3
Nausea/vomiting: No	151	92.7
Headache: Yes	44	21.4
Headache: No	162	78.6
Dizziness: Yes	32	15.5
Dizziness: No	174	84.5
Bloating: Yes	60	29.1
Bloating: No	146	70.9
Diarrhea: Yes	18	8.7
Diarrhea: No	188	91.3

Table 4 shows that 74.3% of students had dysmenorrhea, while more than half of them (63.4%) experienced moderate pain. One third of students (24.8%) have a family history of dysmenorrhea. This study reported that around 55% had reduced appetite and 60% had bloating during dysmenorrhea.

Table 5

Frequency and Percentage of Quality of Life During Dysmenorrhea Among the Adolescents ($n = 153$)

Variables	Very Poor frequency (%)	Poor frequency (%)	Fair frequency (%)	Good frequency (%)	Very Good frequency (%)
Physical health	8(5.2)	20(13.1)	56(36.6)	58(37.9)	11(7.2)
Mood	8(5.2)	41(26.8)	61(39.9)	40(26.1)	3(2.0)
Routine work	8(5.2)	38(24.8)	51(33.3)	45(29.4)	11(7.2)
Leisure time work	9(5.9)	28(18.3)	48(31.4)	43(28.1)	25(16.3)
Enjoying with friends	6(3.9)	12(7.8)	22(14.4)	50(32.7)	63(41.2)
Relationship with family	3(2.0)	5(3.3)	18(11.8)	56(36.6)	71(46.4)
Ability to get around physically, excluding feeling dizzy or unsteady or falling	6(3.9)	15(9.8)	45(29.4)	57(37.3)	30(19.6)
Self confidence	18(11.8)	39(25.5)	54(35.3)	30(19.6)	12(7.8)
Concentration	11(7.2)	35(22.9)	59(38.6)	40(26.1)	8(5.2)
Economic status	1(0.7)	9(5.9)	46(30.1)	54(35.3)	43(28.1)
Living or housing situation	0	4(2.6)	31(20.3)	56(36.6)	62(40.5)
Support from Family & friends	2(1.3)	2(1.3)	15(9.8)	53(34.6)	81(52.9)
Health Services	0	2(1.3)	16(10.5)	63(41.2)	72(47.1)
Satisfaction with oneself	6(3.9)	16(10.5)	35(22.9)	46(30.1)	50(32.7)

Table 5 shows the overall quality of life of the students. One quarter (26.8%) of the respondents had a poor mood. Almost half (46.4%) of the respondents had a very good relationship with family. One fourth (25.5%) of the respondents reported poor self-

confidence during dysmenorrhea. Table 6 shows the self-care behavior during menstruation. Half of the students (48.4%) usually took a warm bath. More than half (66.7%) of students never took herbal medicines. The majority (84.3%) of them never took over-the-counter drugs. Only a few (1.3%) visited hospitals.

Table 6

Frequency and Percentage of Self Care Behaviour During Dysmenorrhea Among the Adolescents ($n = 153$)

Self-Care Behavior	Always frequency (%)	Sometimes frequency (%)	Never frequency (%)
Ignore the pain.	18(11.8)	122(79.7)	13(8.5)
Take rest	35(22.9)	106(69.3)	12(7.8)
Drink hot liquids.	55(35.9)	80(52.3)	18(11.8)
Drink cold beverages	15(9.8)	102(66.7)	36(23.5)
Eat oily and spicy foods	27(17.6)	112(73.2)	14(9.2)
Perform exercises	9(5.9)	91(59.5)	53(34.6)
Use hot water bag/heating pads	46(30.1)	66(43.1)	41(26.8)
Take warm bath	74(48.4)	67(43.8)	12(7.8)
Distraction from pain by listening to music, watching TV etc.	79(51.8)	64(41.8)	10(6.5)
Communicate feelings with friends and family	45(29.4)	93(60.8)	15(9.8)
Talk to yourself to endure pain.	31(20.3)	67(43.8)	55(35.9)
Take herbal medicines	11(7.2)	40(26.1)	102(66.7)
Take over-the-counter drugs	4(2.6)	20(13.1)	129(84.3)
Visit hospitals	2(1.3)	36(23.5)	115(75.2)

Figure 1

Pie Chart Representing Prevalence of Dysmenorrhea Among Respondents (n=206)

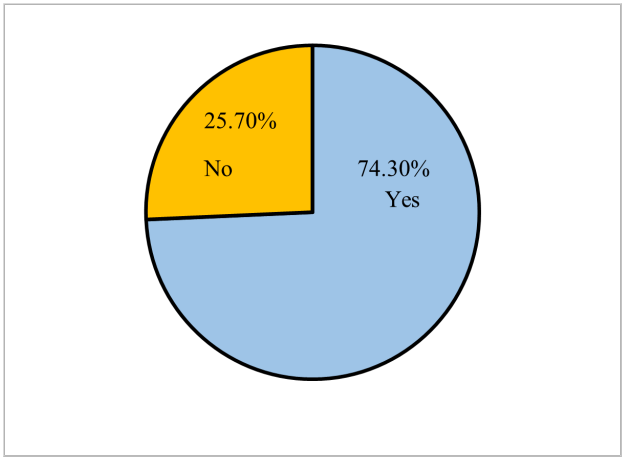
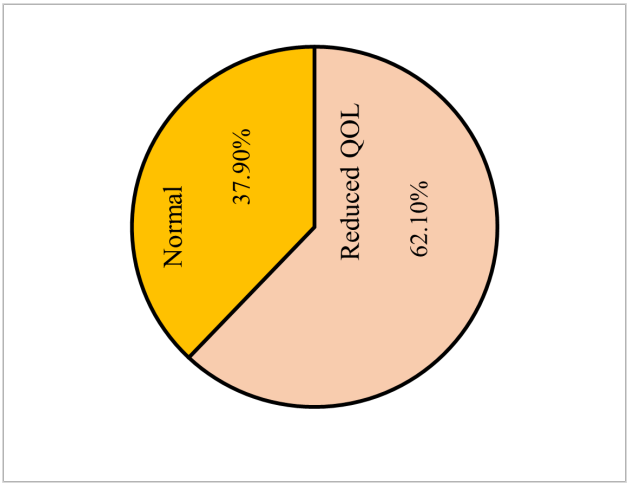


Figure 2

Pie Chart Representing Quality of Life During Dysmenorrhea Among Respondents (n=153)



Among the 206 respondents, 74.30% reported experiencing dysmenorrhea, whereas 25.70% indicated that they did not have dysmenorrhea (Figure 1). The findings suggest that menstrual pain was highly prevalent in the study population, affecting nearly three-quarters of the participants.

Figure 3

Pie Chart Representing Self-Care Behaviour During Dysmenorrhea Among Respondents (n=153)

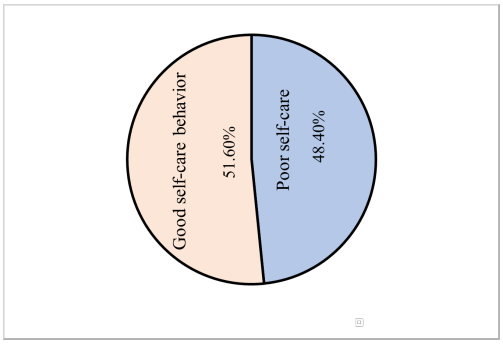


Figure 2 shows that nearly 62% of the participants experienced reduced quality of life. Quality of life was assessed using an adapted version of the Quality of Life Enjoyment and Satisfaction Questionnaire–Short Form (Q-LES-Q-SF) (Endicott et al., 1993). Respondents scoring less than 70% of the maximum obtainable score were categorized as having reduced quality of life, whereas those scoring 70% or above were categorized as having normal quality of life. Figure 3 shows that 51.6% of the participants had good self-care behavior during dysmenorrhea. Self-care behavior was categorized based on the operational definition adopted for the study, where respondents scoring less than 50% were considered to have poor self-care behavior and those scoring 50% or above were considered to have good self-care behavior.

Table 7

Association Between Socio-Demographic Characteristics and Dysmenorrhea Among the Respondents ($n = 206$)

Sample Characteristics	Yes	No	χ^2	p	df
Class			1.576	0.209	1
9	92(71.3%)	37(28.7%)			
10	61(79.2%)	16(20.8)			
Age (years)			5.048	0.080	2
14	64(68.8)	29(31.2)			
15	76(81.7)	17(18.3)			
16	13(65.0)	7(35)			
Ethnicity			2.970	0.227	2
Dalit	7(53.8)	6(46.2)			
Janajati	87(77)	26(23.0)			
Brahmin/Chhetri	59(73.8)	21(26.2)			
Type of family			0.711	0.399	1
Nuclear	94(72.3)	36(27.7)			
Joint/Extended	59(77.6)	17(22.4)			
Family income per month in NPR			0.845	0.358	1
<Rs. 20,000	22(81.5)	5(18.5)			
>Rs. 21,000	131(73.2)	48(26.8)			
Education of father			2.396†	0.469	3
Illiterate	1(50)	1(50)			
Primary	8(61.5)	5(38.5)			
Secondary and higher secondary	79(75.2)	26(24.8)			
Bachelor and above	65(75.6)	21(24.4)			
Education of mother			1.192†	0.793	3
Illiterate	2(100)	0			
Primary	11(73.3)	4(26.7)			
Secondary and higher secondary	90(72.0)	35(28.0)			
Bachelor and above	50(78.1)	14(21.9)			

($p \leq 0.05$ *= Significant, df = degree of freedom, † = Fisher Exact Test)

The findings presented in Table 7 indicate that dysmenorrhea was not significantly associated with the participants' socio-demographic characteristics.

Table 8

Association Between BMI and Dysmenorrhea Among the Respondents ($n = 206$)

BMI	Yes	No	χ^2	p	df
Underweight < 18.5	28(80.0)	7(20.0)	0.727	0.695	2
Normal 18.5–24.9	101(73.2)	37(28.8)			
Overweight > 25	24(72.7)	9(27.3)			

($p \leq 0.05$ *= Significant, df = degree of freedom)

Similarly, the analysis shown in Table 8 revealed no statistically significant relationship between body mass index (BMI) and dysmenorrhea among the respondents.

The study included predominantly class 9 students (62.6%), with the smallest proportion (9.7%) aged 16 years. More than half (55.5%) belonged to the relatively disadvantaged Janajati group, while about one-third (35.9%) lived in joint families. Most participants' families (86.9%) had a monthly income above Rs. 20,000, and nearly half of their parents had an education at the bachelor's level or higher. With respect to body mass index (BMI), the majority of participants (67%) were classified within the normal range of 18.5–24.9 kg/m². Analysis of menstrual characteristics showed that menarche most commonly occurred at the age of 11 years among 45.1% of the respondents. More than half of the participants (59.7%) reported having regular menstrual cycles, while 66.5% experienced cycle intervals ranging from 21 to 35 days. Most adolescents (79.1%) reported menstrual bleeding lasting between four and seven days, and moderate menstrual flow was observed in 84.5% of the participants. In addition, 27.2% reported no passage of blood clots during menstruation. The prevalence of dysmenorrhea was notably high, affecting 74.8% of the respondents, with moderate pain intensity reported by 48.1%. A family history of dysmenorrhea was identified in 24.8% of the participants (Table 4).

Table 9

Association Between Menstrual Characteristics and Dysmenorrhea Among the Respondents ($n = 206$)

Menstrual Characteristics	Yes	No	χ^2	p	df
Age of menarche			3.825	0.050*	1
< 13 years	119(77.8)	34(22.2)			
≥ 13 years	34(64.2)	19(35.8)			
Regularity of the menstrual cycle			0.286	0.593	1
Yes	93(75.6)	30(24.4)			
No	60(72.3)	23(27.7)			
Length of the menstrual cycle			0.199	0.906	2
< 21 days	22(73.3)	8(26.7)			
21 to 35 days	103(75.2)	34(24.8)			
> 35 days	28(74.3)	11(28.2)			
Days of bleeding			1.419	0.492	2
1 to 3 days	19(65.5)	10(34.5)			
4 to 7 days	123(75.5)	40(24.5)			
More than 7 days	11(78.6)	3(21.4)			
Amount of bleeding			7.017†	0.023*	2
Little	3(50.0)	3(50)			
Moderate	126(72.4)	48(27.6)			
Heavy	24(92.3)	2(7.7)			
Passage of clots			7.398	0.007*	1
Yes	119(79.3)	31(20.7)			
No	34(60.7)	22(39.3)			
Family history			6.947	0.031*	2
Yes	45(88.2)	6(11.8)			
No	33(68.8)	15(31.2)			
Don't know	75(70.1)	32(29.9)			

($p \leq 0.05$ *= Significant, df= degree of freedom, †= Fisher Exact Test)

Table 9 demonstrates significant associations between dysmenorrhea and selected menstrual-related factors, including age at menarche, amount of menstrual bleeding, passage of blood clots, and family history of dysmenorrhea. In contrast, variables such as menstrual cycle regularity, cycle length, and duration of menstrual bleeding did not show statistically meaningful associations.

Table 10

Dysmenorrhea and Quality of Life of the Respondents ($n = 206$)

Dysmenorrhea	Normal	Reduced	χ^2	p	df
Yes	58(37.9)	95(62.1)	9.469	0.002*	1
No	33(62.3)	20(37.7)			

($p \leq 0.05$ *= Significant, df= degree of freedom, †= Fisher Exact Test)

The results presented in Table 10 indicate a significant relationship between dysmenorrhea and the quality of life of the respondents.

About 62.1% experienced reduced quality of life during dysmenorrhea, while 51.6% experienced good self-care behavior. Statistical analysis showed significant associations between dysmenorrhea and age at menarche, amount of bleeding, passage of clots, and family history, whereas cycle regularity, cycle length, and duration of bleeding showed no significant association in this connection.

Discussion

In the present study, the prevalence of dysmenorrhea is reported as 75.2%, which is consistent with the findings of a study conducted in adolescent girls of the Technical College of Dang, Nepal, where the prevalence of dysmenorrhea was 75% (Baidhya & Paneru, 2020). Findings reported in Haryana, India, Northern Ghana, and Morocco, the prevalence of dysmenorrhea was also similar: 79.8%, 83.6%, and 78%, respectively (Ameade et al., 2018; Lghoul et al., 2020; Sangwan & Vashisht, 2017). In contrast, the prevalence was higher compared to studies conducted among adolescent girls in southern India, which was 58.8% (Udayar et al., 2022). The reason for variations could be differences in pain perception, socio-cultural factors, and geographical locations.

Inadequate self-care behavior among adolescents with dysmenorrhea may be attributed to limited awareness regarding effective pain management strategies and dependence on traditional home remedies rather than evidence-based practices. Furthermore, low healthcare-seeking behavior in the Nepalese sociocultural context may be influenced by menstrual stigma, cultural silence surrounding reproductive health, and the perception that menstrual pain is a normal part of womanhood that does not require medical attention (Shrestha et al., 2017). In this study, 63.4% of students reported a moderate level of pain and 21.6% experienced severe pain, which is similar to the study done in Turkey, where students reported moderate (53.7%) and severe pain (27.7%) (Orhan et al., 2018). Contradictorily, Pakistan (students) reported levels of moderate and severe pain at 30.8% and 38.6%, respectively (Ibrahim et al., 2015). This variation reported in the literature might be due to the ages of participants, cultures, or the scale measuring pain severity or level.

The present study showed that the menstrual cycle was regular in 59.7%, which is similar to that of Omani female high school students (Al Kindi & Al Bulushi, 2011). Contrary to this, the menstrual cycle was regular in 80.1% of adolescents in a study in Haryana, India, and 80% in Italy (Lghoul et al., 2020; De Sanctis et al., 2019). The difference may be due to the lifestyle of the people, dietary habits and plan, stress level, hormonal imbalance, or any medical reasons demanding a gynecological check-up. The majority of girls (72.8%) reported the presence of clots during menstruation, consistent with findings in Indian girls, where 80.4% reported clots (Joshi et al., 2015). The study showed that the presence of clots and dysmenorrhea is closely related to each other (Joshi et al., 2015).

Besides pain, the most common symptom during dysmenorrhea in this study was bloating (29.1%), which is inconsistent with a regional study in Palestine, where fatigue was the most common symptom (61.4%) (Abu Helwa et al., 2018). Other symptoms reported were diarrhea in 8.7%, comparable to a study in Chandigarh, India (Kumar et al., 2016), where 5.6% reported diarrhea. Symptoms of nausea and vomiting were present in 7.3%; however, a high frequency (42.66%) was reported in adolescents of Chandigarh, India (Kumar et al., 2016). Differences may be due to the perception of dysmenorrhea, cultural, and environmental factors.

In this connection, it is found that 67% of respondents had normal BMI, in line with a study in young females of Lebanon (Karout et al., 2021), where 71.6% recorded normal BMI. Dysmenorrhea showed no association with BMI, consistent with findings in adolescents in Iran (Khodakarami et al., 2015). Dysmenorrhea was significantly correlated with age at menarche (studies in Dang, Nepal) and Morocco (Baidhya & Paneru, 2020; Sangwan & Vashisht, 2017), but no significant association was found in adolescents in Shai Osudoku, Ghana (Acheampong et al., 2019).

In this connection, dysmenorrhea (family history) was significantly associated with dysmenorrhea, supporting findings among female secondary and preparatory students in Debre Markos, Ethiopia (Schoep et al., 2019). Dysmenorrhea was significantly associated with heavy menstrual flow, consistent with findings in young females of Lebanon (Karout et al., 2021). By contrast, no significant association was found in students of Parakou, Benin (Sidi et al., 2016). Variations may be due to selection methods.

Quality of life and dysmenorrhea are found to be significantly correlated with each other, consistent with studies in Madhya Pradesh, India, and Kadapa District, India (Kumbhar et al., 2011; Kamble et al., 2021). Even though dysmenorrhea prevalence was high, only 24.8% of girls sought hospital care for painful menstruation, higher than in schoolgirls in Manipur, India (Kumar et al., 2016). The majority (73.2%) relied on hot application, higher than in Ghana, where only 11.4% used hot applications (Acheampong et al., 2019). Over-the-counter drug use was 15.7%, compared with 42.5% in adolescents in Kwara

City, Nigeria (Saka et al., 2018). Lack of awareness and access to health services can be attributed to this cause.

Conclusion

The present study demonstrated that dysmenorrhea is highly prevalent among adolescent girls studying at St. Mary's Secondary School, affecting nearly three-fourths of the participants. The condition was observed more frequently among adolescents with earlier menarche, excessive menstrual bleeding, passage of blood clots, and a positive family history of menstrual pain. Dysmenorrhea was found to influence several aspects of daily life, contributing to physical discomfort, emotional distress, and limitations in social and academic activities, thereby lowering the overall quality of life of affected adolescents.

The study recommends strengthening menstrual health education and promoting effective self-care practices among adolescent girls to improve dysmenorrhea management and quality of life. School- and community-based awareness programs, counseling services, and nursing interventions should encourage healthy coping strategies and timely healthcare-seeking behavior. However, the findings may have limited generalizability because the study was conducted in a single school and relied on self-reported menstrual information. Future studies should include larger and more diverse populations and assess intervention strategies to improve self-care behavior and menstrual well-being.

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Author contribution

Conceptualization: Subash Pokhrel, Anuska Lamsal; methodology and investigation: Subash Pokhrel, Anuska Lamsal; formal analysis: Subash Pokhrel, Anuska Lamsal; original draft preparation: Anuska Lamsal, Subash Pokhrel; review, editing, and finalization: Anuska Lamsal.

Artificial Intelligence (AI) Use and Disclosure

In the preparation of this manuscript, COPILOT AI tool was utilized for grammatical accuracy and to improve logical flow of paragraphs, closely considering journal's academic integrity guidelines.

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The manuscript is original, not under review elsewhere, and complies with TUJ publication ethics.

Conflict of Interest

The authors declare no conflict of interest.

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Data Availability

Data available from the corresponding author on request.

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