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Case Report

STUDY MENSTRUAL DISORDERS IN ADOLESCENT GIRLS AT TERTIARY RURAL CARE CENTRE

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ABSTRACT

Introduction: After puberty, adolescence is the time between childhood and adulthood. The term "adolescent" refers to any individual who is between the ages of 10 and 19. Adolescent females regard the menarche to be a significant occurrence in their lives because it is one of the signs of puberty. Menstruation is one of the most significant physiological changes that girls go through during adolescence as they get ready for motherhood on both a physical and emotional level. Although there is a notable range of variation, it usually manifests in females between the ages of 10 and 16. For ovulatory cycles, the typical range is 21–35 days**.**

Methodology: A prospective observational study was carried out. This study comprised 100 teenage girls between the ages of 11 and 18 who came to the department of Obstetrics and gynecology with menstrual issues. Teenage girls who were younger than 10 and older than 18, had not reached menarche, and refused to take part in the study were not included.

Results: Menorrhagia was present in 24% (n=24). Polymorphous affected 3% (n=3). Amenorrhea was reported by 2% (n=3). Hypomenorrhea was reported by 4% was diagnosed in 4% (n=4) of patients. Hypermenorrhea was present in 3% (n=3).Abdominal pain was the most common symptom, reported by 64.29% (n=36). Backache affected 51.79% (n=29). Depression was noted in 41.07% (n=23). Other symptoms included: Diarrhea: 25.00% (n=14), Vomiting: 19.64% (n=11), Headache: 16.07% (n=9), Loss of appetite: 17.85% (n=10).the highest levels of awareness were for common symptoms such as backache (88%) and abdominal pain (82%), indicating that participants were more likely to recognize these as concerning. However, awareness was notably lower for other important menstrual disorders.

Conclusion: because of these low awareness levels, there is an urgent need for reproductive health-focused health education initiatives. It was found that symptomatic care and reassurance were beneficial in the treatment of these instances. Menstrual disorders and their effects on social behaviour could be lessened by incorporating menstrual health into regular health and hygiene education, particularly at the school and community levels. This would close these knowledge gaps and enable women to seek prompt medical attention.

Keywords: Adolescence, puberty, menstrual disorders, menarche.

INTRODUCTION

Adolescence is the period of transition between puberty and adulthood. Any person between the ages of 10 and 19 is considered an adolescent by the World Health Organization (WHO). This age group is included in the WHO definition of young people, which includes those between the ages of 10 and 24. It is a distinct period in human development and crucial for setting the groundwork for long-term health. Teenagers grow quickly in terms of their physical, cognitive, and emotional development.

This has an impact on their emotions, thoughts, decisions, and interactions with others and their environment. The adolescent years are marked by a substantial amount of death, disease, and damage even though they are generally regarded as a healthy stage of life. A lot of this can be avoided or treated. At this stage, teenagers develop behavioral

patterns that can either protect their health and the health of others around them, now and in the future, such as those linked to diet, physical exercise, substance use, and sexual activity. Menarche is one of the markers of puberty and therefore can be considered as an important event in the life of adolescent girls. The onset of menstruation is one of the major physiological changes that occur in girls during adolescence as they prepare both physically as well as emotionally for their motherhood. It is a characteristic physiological process in women that demonstrates her capacity for procreation. However, this can be challenging and often entails a lot of suffering and humiliation Studies suggested that menarche tends to appear earlier in life as the sanitary, nutritional, and economic conditions of a society improve. For most females, it occurs between the age of 10 and 16 years; however, it shows a remarkable range of variation.

The normal range for ovulatory cycles is between 21 and 35 days. While 11 most periods last from 3 to 5 days, duration of menstrual flow normally ranges from 2 to 7 days. For the first few years after menarche, irregular and longer cycles are common. Menstrual disorders are a common presentation by late adolescence; 75% of girls experience some problems associated with menstruation including delayed, irregular, painful, and heavy menstrual bleeding, which are the leading reasons for the physician office visits by adolescents. Menstrual patterns are also influenced by a number of host and environmental factors. Changes in the normal menstrual patterns of adolescent girls may affect their physical and psychological well-being. Moreover, such disturbances have been well documented to have an impact on the physical and social activities of adolescents. Simultaneously, it has been found that lifestyle factors such as obesity, exercise, smoking, alcohol drinking, physical activity, and stress are related to menstrual problems.

There is a growing body of literature suggesting that the changes in hormone levels associated with lifestyle factors result in various menstrual problems among young women. However, the examination of these factors with menstrual problems in adolescents in low-resource settings has received little attention. Furthermore, it has been noticed that previous studies of the relationship between lifestyle factors and menstrual problems among young and adult women involved age-related differences. On the other hand, with regard to treatment-seeking behavior, due to cultural norms, adolescent girls commonly hold negative attitudes and beliefs towards menstruation. However, few studies in India have described the lifestyle factors associated with various menstrual cycle patterns. We therefore surveyed the current changes in the age of menarche in India adolescents. We also evaluated general menstruation 12 patterns, the incidence of common menstrual disorders. Historically, the age at menarche has gradually decreased by about 4 months in every 10-year interval. Some of these menstrual characteristics, such as irregularity in the menstrual cycle, premenstrual pain and discomfort, pain and discomfort at the time of menstrual discharge, and a heavy menstrual discharge, may affect the general and/or reproductive health of a woman. Thus, the present study was carried out to study menstrual disorders in adolescent girls at tertiary care center.

METHODOLOGY

The present hospital based prospective observational study was conducted to study menstrual disorders in adolescent girls at rural tertiary care center. Study was conducted in Department of Obstetrics and Gynecology of rural tertiary care center from December 2023 to April 2025. A total of 100 adolescent girls with menstrual disorders in the age range of 11-18 years coming to Department were included in the study. Adolescent girls with Age <10 years and >18 years, not attended menarche and unwilling to participate in study were excluded.

The study was started after taking ethical clearance from the Institutional Ethics Committee. Written informed consent from all. Detailed history was taken and general physical, systemic and examinations was done and vitals were checked.

Inclusion criteria: Adolescent girls in age group 11-18 years,adolescent girls who attended menarche at least 2 years, adolescent girls who had given written consent. Exclusion criteria: Adolescent girls with Age 18 years, adolescent girls not attended menarche, not willing to participate in the study.

RESULTS

The age distribution of 100 patients in the study. The age groups included: 11–13 years: 12 patients (12.00%), 14–15 years: 40 patients (40.00%), 16–18 years: 34 patients (34.00%). The mean age of the patients was 15.30 ± 2.34 years. The majority of patients were in the 14–15 years age group, followed by the 16– 18 years group.

The distribution of age at menarche among 100 patients. 18% (n=18) of patients experienced menarche before age 11. The majority, 59% (n=59), had menarche between 11 and 13 years. 21% (n=21) had menarche between 14 and 16 years. A small percentage, 2% (n=2), experienced menarche after age 16. The mean age of menarche was 13.67 ± 2.03 years. Most patients experienced menarche during the typical adolescent period of 11–13 years.

The religious affiliation of the 100 patients included in the study. The majority of patients were Hindu, comprising 72% (n=72). Muslims represented 27% (n=27) of the patients. A small minority were Christian at 1% (n=1). There were no patients from other religious groups. This distribution reflects the religious composition of the study population.

The socio-economic status of the total study population is, upper class: 5 patients (5.00%), Upper middle class: 17 patients (17.00%), Lower middle class: 19 patients (19.00%), Upper lower class: The largest group, with 38 patients (38.00%) and Lower class: 21 patients (21.00%). The majority of patients belonged to the upper lower and lower-class categories, representing more than half of the study population.

The distribution of family types among the 100 patients. Nuclear families comprised the majority, with 68 patients (68.00%). Joint families included 32 patients (32.00%). This indicates that most patients belonged to nuclear family setups.

The pattern of menstrual cycles among the 100 patients. 79% (n=79) of patients reported having regular menstrual cycles. 21% (n=21) of patients experienced irregular menstrual cycles. The majority of patients had regular menstrual cycles, indicating normal menstrual health in most of the study population.

The duration of menstrual cycles among the 100 patients. 31% (n=31) of patients had a menstrual duration of 3 days or less. 58 The majority, 66% (n=66), experienced menstrual bleeding lasting 4 to 8 days. A small proportion, 3% (n=3), had prolonged menstrual bleeding of 9 days or more. Most patients had a menstrual duration within the typical range of 4 to 8 days.

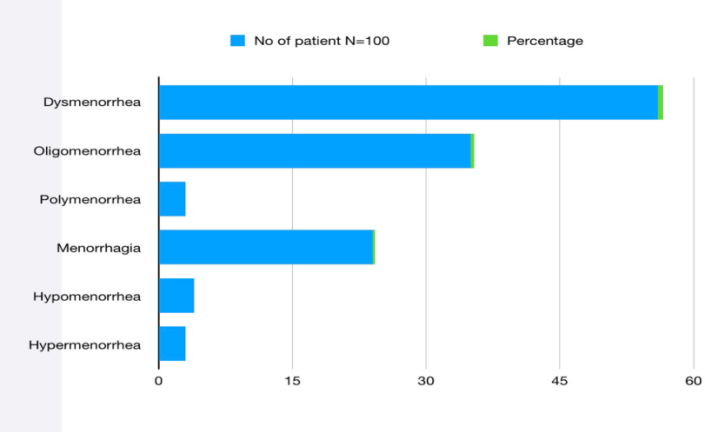

Fig 1: Menstrual disorders distribution among patients

Figure no 1 shows
The prevalence of various menstrual disorders among the 100 patients. Dysmenorrhea was the most common disorder, affecting 56% (n=56) of patients. Oligomenorrhoea occurred in 35% (n=35). Menorrhagia was present in 24% (n=24). Polymorphous affected 3% (n=3). Amenorrhea was reported by 2% (n=3). Hypomenorrhea was reported by 4% was diagnosed in 4% (n=4) of patients. Hypermenorrhea was present in 3% (n=3). Dysmenorrhea and oligomenorrhoea were the most prevalent menstrual disorders among the patients.

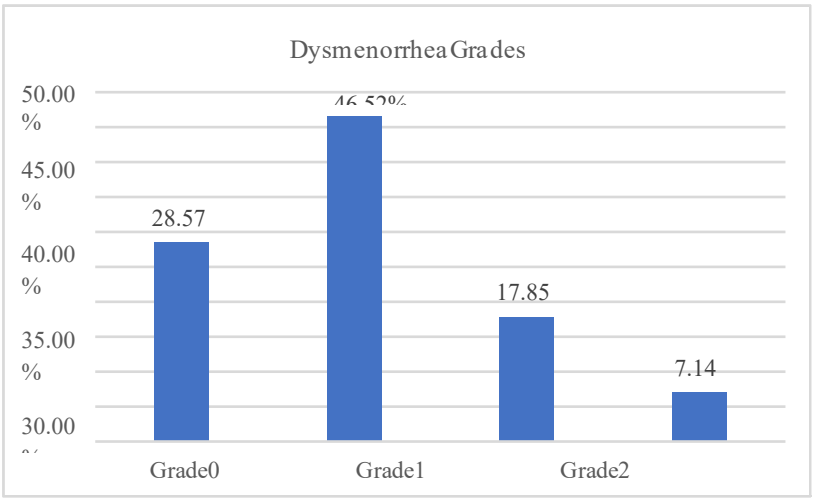

Fig 2: Grades of Dysmenorrhea distribution among patients.

Figure no 2 shows
The severity of dysmenorrhea among the 56 patients who reported this condition. Grade 0 (No pain): 16 patients (28.57%), Grade 1 (Mild pain): 26 patients (46.52%), Grade 2 (Moderate pain): 10 patients(17.85%) and Grade 3 (Severe pain): 4 patients (7.14%). Most patients with dysmenorrhea experienced mild pain (Grade 1), followed by those with no pain (Grade 0).

Table 1: Dysmenorrhea associated symptoms distribution among patients:

Symptoms	No. of patients (n=56)	Percentage
Abdominal pain	36	64.29%

Backache	29	51.79%
Depression	23	41.07%
Diarrhea	14	25.00%
Vomiting	11	19.64%
Headache	09	16.07%
Loss of appetite	10	17.85%

The above table shows the symptoms experienced by the 56 patients suffering from dysmenorrhea. Abdominal pain was the most common symptom, reported by 64.29% (n=36). Backache affected 51.79% (n=29). Depression was noted in 41.07% (n=23). Other symptoms included: Diarrhea: 25.00% (n=14), Vomiting: 19.64% (n=11), Headache: 16.07% (n=9), Loss of appetite: 17.85% (n=10).Abdominal pain and backache were the most frequently associated symptoms with dysmenorrhea in this patient group.

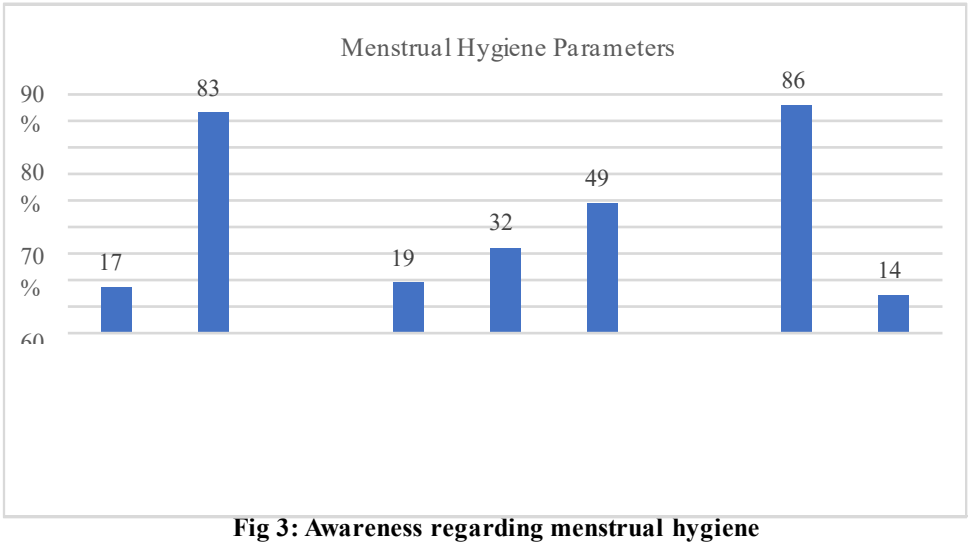

Fig 3: Awareness regarding menstrual hygiene

Figure no 3 shows The majority of participants (83%) reported using sanitary pads during menstruation, while 17% continued to use cloth. Regarding the number of pads used per day, 49% used 3–4 pads, 32% used 2–3 pads, and 19% used only 1–2 pads per day, indicating variability in personal hygiene practices. Additionally, 86% of the respondents maintained daily bathing during menstruation, whereas 14% did not, reflecting a need for continued emphasis on personal hygiene and menstrual health education.

Table 2: Awareness regarding menstrual symptoms that require medical attention.

Disorders	**Aware**	**Not Aware**	**Total**
Oligomenorrhoea	24	76	100
Polymenorrhoea	27	73	100
Pain in abdomen	82	18	100
Backache	88	12	100
PMS	26	74	100
Depression	22	78	100
Intermenstrual bleeding	28	72	100
Menorrhagia	25	75	100
Amenorrhoea	21	79	100

Table 2 shows Assessing awareness regarding menstrual symptoms that require medical attention, it was observed that the highest levels of awareness were for common symptoms such as backache (88%) and abdominal pain (82%), indicating that participants were more likely to recognize these as concerning. However, awareness was notably lower for other important menstrual disorders. Only 28% identified intermenstrual bleeding, 27% polymenorrhoea, 26% PMS,25% menorrhagia, 24% oligomenorrhoea, 22% depression, and just 21% recognized amenorrhoea as symptoms warranting medical consultation. These findings highlight a significant gap in awareness, especially regarding less overt or misunderstood menstrual abnormalities, underscoring the need for improved menstrual health education.

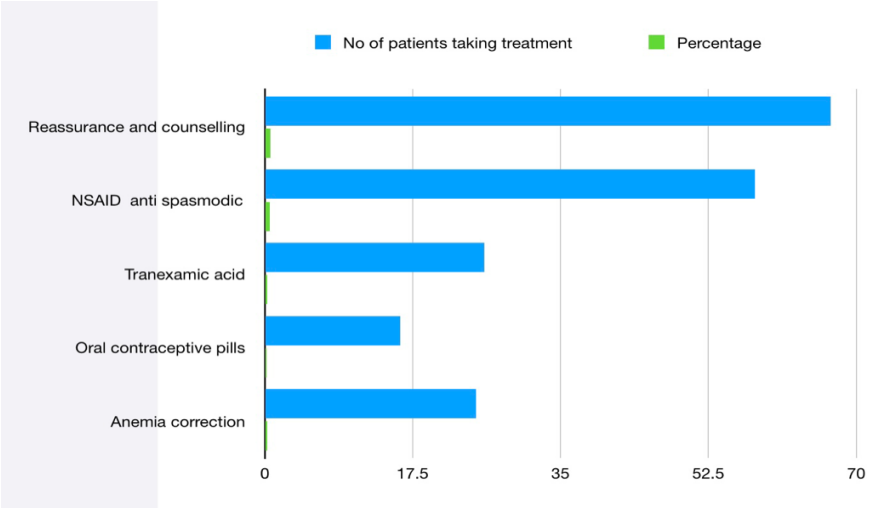

Fig 4: Treatment offered to the patients.

Figure no 4 The most commonly offered treatment was reassurance, provided to 67% of the patients, highlighting the importance of counseling and addressing patient concerns in managing their condition. NSAIDs and antispasmodics were administered to 58% of the patients, indicating their widespread use in controlling pain and discomfort. Tranexamic acid, an antifibrinolytic agent used to reduce menstrual blood loss, was given to 26% of patients. Oral contraceptive pills, known for regulating menstrual cycles and reducing bleeding, were used in 16% of cases. Anemia correction, including iron supplementation, was offered to 25% of patients, suggesting that either the prevalence of clinically significant anemia was low in the cohort or it was not a primary presenting complaint in most cases. The distribution of treatment modalities reflects a tailored approach based on individual patient symptoms and needs, with an emphasis on conservative and pharmacological management.

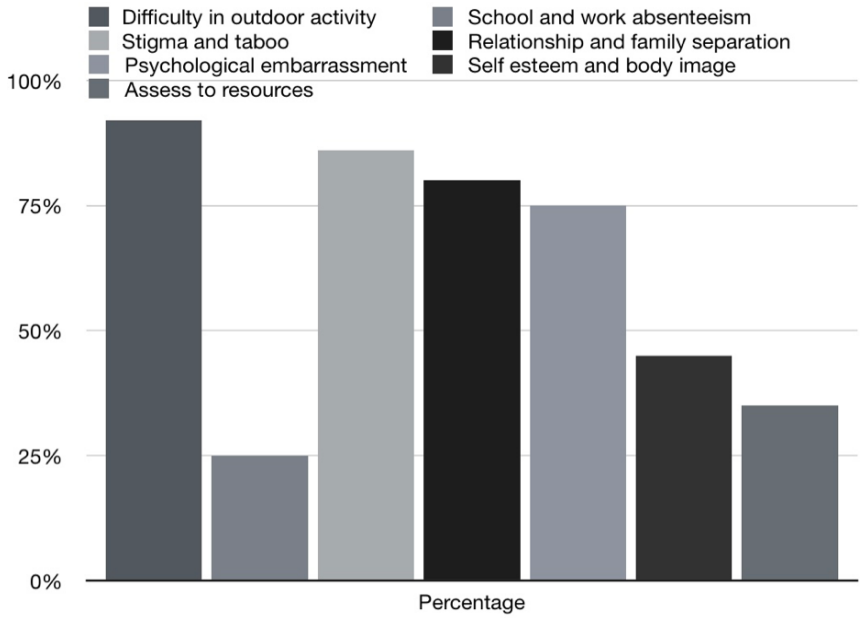

Fig 5: social effect of menses and menstrual disorders.

Figure no 5 shows on assessing social effect of menses and menstrual disorders ,it was observed ,that difficulty in outdoor activity account to 92% which is most common concern experienced, followed by stigma and taboo which is 86% associated with relationship and family separation accounting to 80% and mental health changes and psychological embarrassment which is 75% ,while a significant problem of school and work absenteeism accounts to 25% of total and self-esteem and body image contributing to 45% of total.limited assess to needful resources is also contributing to 35%.

DISCUSSION

The distribution of age at menarche among 100 patients showed most patients experienced menarche during the typical adolescent period of 11–13 years. (59%). The mean age of menarche was 13.67 ± 2.03 years.

Sughra Abbasi et al [1] in a study on common menstrual disorders among adolescent girls observed mean age at menarche was 11.82±2.10 years with a range from 9 to 16 years.

Pramila Poudel et al [2] in study on to identify the pattern of menstruation observed mean age at menarche was 13.13±0.72 years. This finding was similar to present study.

Similarly on a study done on Turkey the mean age at menarche was12.8±1.3. The mean age at menarche among adolescents was 12.94±1.01.[3] On a study conducted in Uttar Pradesh and 13.2±1 on a study conducted in Lucknow, India.[4] The mean age of adolescents and mean age at menarche was 14.0±1.3 years and 12.2±0.9 years respectively on a study conducted inPokhara city of Nepal. [5] There is a variation in the age at menarche among adolescents which may be due to influence of genes, socio-demographic conditions, geographical variations, general health and wellbeing, nutritional status and activities of daily living.

In the present study, majority of patients were Hindu, comprising 72% (n=72). Muslims represented 27% (n=27) of the patients. A small minority were Christian at 1% (n=1).

In the present study, majority of patients belonged to the upper lower (38%) and lower-class (21%) categories, representing more than half of the study population.

Varsha N. Patil et al [6] in a study on menstruation and related disorders in Indian adolescent girls observed majority 79% of the study population belong to the lower class.

The distribution of family types among the 100 patients showed nuclear families comprised the majority, with 68 patients (68.00%). Joint families included 32 patients (32.00%). This indicates that most patients belonged to nuclear family setups.

In the present study, the pattern of menstrual cycles among the 100 patients showed 79% (n=79) of patients reported having regular menstrual cycles. 21% (n=21) of patients experienced irregular menstrual cycles. The duration of menstrual cycles among the 100 patients showed most patients had a menstrual duration within the typical range of 4 to 8 days. (66%)

Pramila Poudel et al [2] in study on to identify the pattern of menstruation observed majority (78.27%) had regular pattern of menstruation. This finding was similar to present study.

Sughra Abbasi et al [1] in a study on common menstrual disorders among adolescent girls observed the menstrual cycles mean length was 31.6±5.8 days and incidence of irregular menstruation was 69.3%.

In the present study, the prevalence of various menstrual disorders among the 100 patients showed Dysmenorrhea was the most common disorder, affecting 56% (n=56) of patients. Oligomenorrhoea occurred in 31% (n=31). Menorrhagia was present in 24% (n=24). Polymorphous affected 3% (n=3). Amenorrhea was reported by 2% (n=2). Polycystic ovarian syndrome (PCOS) was diagnosed in 9% (n=9) of patients. Hypothyroidism was present in 3% (n=3).

Varsha N. Patil et al [6] in a study on menstruation and related disorders in Indian adolescent girls observed that 55% study subject had dysmenorrhoea, 65% had irregular menses, 52% oligomenorrhoea, 13% polymenorrhoea, 28% had menorrhagia, 2% amenorrhea, 10% with PCOS and 2% with endometriosis, 4% with hypothyroidism, 4% with hyperprolactinemia.

Sughra Abbasi et al [1] in a study on common menstrual disorders among adolescent girls observed incidence of irregular menstruation, prolonged menstrual bleeding, and dysmenorrhea were 69.3% (n=52), 8% (n=6), and 22.6% (n=17) respectively. Of the total 52 irregular menstrual cycles, the prevalence of amenorrhea, oligomenorrhea, and polymenorrhea was 5.3% (n=4), 42.7% (n=32), and 21.3% (n=16) respectively.

Pramila Poudel et al [2] in study on to identify the pattern of menstruation observed almost half of the adolescents (48.3%) had moderate to severe pain during menstruation.

Rumana et al [7] found higher incidence of dysmenorrhea. Another study conducted by Teshome et al [8] reported 59.7% prevalence while investigating2700 menarche adolescent girls. In their study, dysmenorrhea was significantly associated with socioeconomic status.

The prevalence of dysmenorrhea in other reports from India were as follows: in Sharma et al [5]dysmenorrhoea was observed in 67.2% adolescent girls, 67% in Mckay study.[9] In present study it was observed that majority of study subject with dysmenorrhoea were reported from late adolescent age group. Abundant menstrual blood loss was also a common problem among the adolescents in this study. The most common cause of heavy menstrual bleeding in adolescents is dysfunctional uterine bleeding related to anovulation; therefore, it was expected to be higher in the adolescence period.

In the present study, severity of dysmenorrhea among the 56 patients who reported this condition showed Grade 0 (No pain): 16 patients (28.57%), Grade 1 (Mild pain): 26 patients (46.52%), Grade 2 (Moderate pain): 10 patients(17.85%) and Grade 3 (Severe pain): 4 patients (7.14%).

In the present study, abdominal pain was the most common symptom, reported by 64.29% (n=36). Backache affected 51.79% (n=29). Depression was noted in 41.07% (n=23). Other symptoms included: Diarrhoea: 25.00% (n=14), Vomiting: 19.64% (n=11), Headache: 16.07% (n=9), Loss of appetite: 17.85% (n=10).

Sughra Abbasi et al [1] in a study on common menstrual disorders among adolescent girls observed dysmenorrhea was the common complaint followed by abdominal pain, backache.

Regarding the problems faced by adolescent during menstrual days feeling of tiredness and abdominal bloating remains the most prevailed physical problem and restriction in religious and family activities was experienced by majority of the adolescents. This finding is congruent with the finding of another similar studies conducted in Eastern Nepal.[10,11] In addition, literature suggests that pattern and problems of menstruation is determined by socioeconomic, dietary and climatic conditions.[12]

In present study, the majority of participants (83%) reported using sanitary pads during menstruation, while 17% continued to use cloth. Regarding the number of pads used per day, 49% used 3–4 pads, 32% used 2– 3 pads, and 19% used only 1–2 pads per day, indicating variability in personal hygiene practices. Additionally, 86% of the respondents maintained daily bathing during menstruation, whereas 14% did not, reflecting a need for continued emphasis on personal hygiene and menstrual health education.

Sughra Abbasi et al [1] also mentioned that the awareness regarding the knowledge of adolescent girls regarding menstrual hygiene was less, prompting the health education programs in this age group.

Rumana et al [7] also found that the awareness regarding menstrual symptoms that warrant medical attention was low in adolescent girls.

In the study assessing awareness regarding menstrual symptoms that require medical attention, it was observed that the highest levels of awareness were for common symptoms such as backache (88%) and abdominal pain (82%), indicating that participants were more likely to recognize these as concerning. However, awareness was notably lower for other important menstrual disorders. Only 28% identified intermenstrual bleeding, 27% polymenorrhoea, 26% PMS, 25% menorrhagia, 24% oligomenorrhoea, 22%depression, and just 21% recognized amenorrhoea as symptoms warranting medical consultation. These findings highlight a significant gap in awareness, especially regarding less overt or misunderstood menstrual abnormalities, underscoring the need for improved menstrual health education.

Shekhar Chauhan et al [13] in a study observed treatment-seeking for menstrual problems was higher for early adolescents than late adolescents; however, results were not statistically significant. At the early ages of menstruation, adolescent girls tend to have poor knowledge about the menstrual cycle, and this could be attributed to their higher treatment seeking than late adolescents. Furthermore, as age increases, girls started seeking advice from their mothers and friends that may result in low treatment-seeking for menstrual problems among adolescent girls.

Chan et al. [14] believe that adolescent girls start accepting the menstrual problems as their family do not support them and taught them to avoid visiting doctors for such problems.

In our study, the most offered treatment was reassurance, provided to 67% of the patients, highlighting the importance of counseling and addressing patient concerns in managing their condition. NSAIDs and antispasmodics were administered to 58% of the patients, indicating their widespread use in controlling pain and discomfort. Tranexamic acid, an antifibrinolytic agent used to reduce menstrual blood loss, was given to 26% of patients. Oral contraceptive pills, known for regulating menstrual cycles and reducing bleeding, were used in 16% of cases.

Pramila Poudel et al [2] also highlighted the importance of reassurance, education regarding hygiene and self-care along with the management ofmenstrual symptoms in the adolescent girls, similar to our findings. Chia et al [15] reported that most commonly their patients were managed with a warm beverage (62%), paracetamol (57%), and rest / sleeping (45%), while the most effective strategies were using non-steroidal anti-inflammatory drugs (100%). Esimai and Esan [16] study also reported the importance of reassurance, rest and symptomatic management done in 76% of the cases. Zhou et al [17] reported that the percentages of their study participants taking medicine with mild, moderate and unbearable dysmenorrhea were 4.0%, 13.3% and 23.7%, respectively.

Furthermore, girls in rural areas generally do not prefer to disclose their menstrual problems, which may be attributed to their lower treatment-seeking for menstrual problems. Also, limited health-care facilities in rural areas could hamper treatment-seeking among adolescent girls.

In our study difficulty in outdoor activity is the major social effect of menses and disorders contributing to 92% (because of pain and hygiene issues) followed by stigma and taboo(including restriction to household activity and participation in festivities), relationship and family separation , psychological embarrassment accounting to almost 75% and a major social concern Of school and work absenteeism contributing to 25% (due to severe pain or lack of menstrual products) followed by lowering of self-esteem and body image to 45%, reduced assess to resources also plays a significant role.Cakir study analyzed pattern of menstrual cycle in association with effect on social activities and school attendance among female students approximately 10% student with severe dysmenorrhea had chronic school absenteeism and needed to consult a physicianTitilayo study analysed prevalence of menstrual cycle discomfort and it's influence on daily academic activities and psychological relationship among undergraduate females. They reported about 74% of female were often disturbed from normal school activity and 49% experienced psychological problem during menses.

CONCLUSION

Social effect of menses and menstrual disorders which includes restriction to outdoor activities or social participation of girls as major issue accounting to 92% adding with stigma and taboo,social exclusion in some culture,school and work absenteeism, mental health and psychological embarrassmentwith lowering of self-esteem and distorted body image.These low levels of awareness suggest a pressing need for health education programs targeting reproductive health. Reassurance and symptomatic management was observedto be helpful in the treatment of these cases.Integrating menstrual health into routine health and hygiene education, especially at the school and community levels, could bridge these knowledge gaps and empower women to seek timely medical attention, ultimately reducing the burden of undiagnosed and untreated menstrual disorders and it's impact on social behaviour.

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