



PREVALENCE AND DISTRIBUTION OF DIFFERENT GYNAECOLOGICAL PROBLEMS AMONG ADOLESCENTS AND YOUNG ADULTS ATTENDING OPD AT A TERTIARY CARE CENTRE

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ABSTRACT **Background** -Adolescents constitute over 21.4% of the population in India. Gynaecological problems in adolescents can be structural, hormonal, or functional. These issues occupy a special space in the spectrum of gynaecological disorders because they are often different from the conditions that affect adult women. These issues are varied, encompassing menstrual disorders, infections, and other reproductive health challenges. The burden of gynaecological problems among Indian adolescents is a significant public health concern as a large proportion of adolescent girls in India suffer from gynaecological morbidities. **Objectives:** This study aimed to estimate the prevalence of gynaecological problems among adolescent girls attending OPD at a tertiary care centre and analyse the various clinical presentations in this population. **Methods:** An institution-based observational study with a cross-sectional design was conducted over 12 months in the Department of Obstetrics and Gynaecology at Swaroop Rani Hospital, Prayagraj. The study included 500 adolescent girls aged 10-19 years who presented with gynecological problems. Data were collected using a researcher-administered questionnaire, detailed history-taking and clinical examinations. **Results:** The study found that 67.6% of the participants reported menstrual disorders, with dysmenorrhea being the most prevalent (17.8%) among them. Amenorrhea, both primary (7.1%) and secondary (6.8%), was also notable. Vaginal discharge was reported by 13.8% of the participants, and breast-related complaints, such as pain and lumps, affected 6%. **Conclusion:** Gynaecological problems, particularly menstrual disorders, are highly prevalent among adolescent girls. The findings highlight the need for targeted health education and interventions to manage these issues effectively, particularly in rural and socioeconomically disadvantaged populations. Regular screening and early intervention are crucial to addressing these health challenges and improving the overall well-being of adolescent girls.

KEYWORDS : Adolescent girls , gynaecological problems , prevalence, menstrual disorders, dysmenorrhea

INTRODUCTION

Adolescence, the transitional phase between puberty and adulthood, marks significant physical, psychological, and social changes. According to the World Health Organization (WHO), adolescence involves the progression toward sexual maturity, mental development, and identity formation. Globally, adolescents comprise 1.2 billion individuals, representing a fifth of the population. In India, they make up over 21.4%, highlighting their importance in public health initiatives such as the Government of India's adolescent-friendly reproductive and sexual health services (ARSH). Adolescent gynaecological problems are distinct, often requiring specialized evaluation and treatment. These issues can be structural, hormonal, or functional. Structural conditions, such as Müllerian duct anomalies, may present as primary amenorrhea or menstrual irregularities. Hormonal disorders, like polycystic ovary syndrome (PCOS), precocious puberty, or delayed puberty, often manifest as irregular cycles, hirsutism, and metabolic issues. Functional conditions, including dysmenorrhea, menorrhagia, and amenorrhea, are prevalent, with dysmenorrhea significantly affecting school attendance and daily activities, while menorrhagia can lead to anemia and fatigue.

Adolescent gynaecological problems require multidisciplinary management involving gynaecologists, endocrinologists, and other specialists. Sensitive communication is essential to address psychological concerns and educate adolescents about their health. In India, gynaecological issues in adolescent girls are a major public health concern, with menstrual disorders being the most common. Approximately 15% of Indian adolescent girls experience gynaecological issues, influenced by socio-demographic factors. A cross-sectional study in Karnataka revealed that nearly 50% of adolescent girls attending a tertiary care center reported menstrual disorders, with dysmenorrhea (22.37%) being the most common, followed by menorrhagia and oligomenorrhea. Treatment-seeking behaviour among adolescents is shaped by socio-economic status, education, and cultural beliefs, which can hinder timely intervention.

The significant burden of gynaecological morbidity in Indian adolescents underscores the need for targeted research and

interventions. Understanding the prevalence, and clinical presentations required for adolescent gynaecological problems is crucial for improving care. Despite the prevalence of these issues, there is limited data specific to the Indian context. Research focusing on these aspects can facilitate better management and address the unique needs of adolescents, ensuring their physical and psychological well-being during this critical phase. Therefore, the present study aims to evaluate the prevalence and clinical profiles of gynaecological problems in adolescent girls aged 10-19 years attending outpatient departments (OPD) in a tertiary care centre.

MATERIALS AND METHODS

Study Type And Design

The current study was an institution-based observational study with a cross-sectional design.

Study Setting

The study was conducted at the Department of Obstetrics and Gynaecology of the Swaroop Rani Hospital, Prayagraj, affiliated to Motilal Nehru Medical College, Prayagraj, Uttar Pradesh.

Study Period

The study was conducted for 12 months from February of 2023 to March of 2024.

Study Population

The study population consisted of adolescent girls in age group of 10-19 years presenting to the study institution for their assessment during the period of the study.

Inclusion Criteria

The inclusion criteria for the study population were –

1. Adolescent girls of age 10-19 years .
2. Presenting to the study institution with gynaecological problems like menstrual disorders, vaginal discharge, pain abdomen, acne, hirsutism, breast lump, breast discharge, mastalgia, UTI for assessment
3. Providing written informed consent to take part in the study.

Exclusion Criteria

The exclusion criteria for the participants that were considered for the current study were as follows

1. Adolescents with obstetrical complaints, teenage pregnancies
2. Patients not providing written informed consent.
3. Patients who are moribund or extremely sick.

Sample Size And Sampling Technique

The sample size was determined using the Cochran's formula. considering the prevalence of menstrual problems among adolescents as the outcome variable, the estimated p was considered to be 71% based on the data reported by Kalyankar et al. At 95% significance and 4% allowable error, the calculated sample size was 495, which was rounded off to 500. A consecutive enumeration sampling technique was adopted. All adolescent girls aged between 10 and 19 years who presented to the Obstetrics and Gynaecology department of the study institution and fulfilled the inclusion and exclusion criteria were included in the resulting sample for analysis.

Data Collection Technique

After obtaining ethical clearance and informed consent, socio-demographic data were collected using a researcher-administered, self-designed questionnaire. Patients were categorized into early adolescents (10-14 years) and late adolescents (15-19 years). A detailed history of gynaecological and associated problems was recorded, including menstrual history focusing on age at menarche, last menstrual period, cycle regularity, frequency, duration, flow amount, and clot passage, classified as per the FIGO System. A normal cycle was defined as lasting 24-38 days with menstrual flow up to 8 days. Cycles shorter than 24 days were considered frequent, while those exceeding 38 days were labelled as infrequent. Irregular cycles were determined based on variations beyond acceptable norms. Flow volume was categorized as normal, light, or heavy based on patient's self-assessment. Amenorrhea, both primary and secondary, was evaluated as per established criteria.

Personal history regarding diet, sleep, bowel/bladder habits, and substance use (alcohol, tobacco, caffeine) was documented. Past medical, surgical, family, and drug histories were noted. General examinations were conducted to assess height, weight, BMI, hirsutism, pigmentation, pallor, icterus, edema, vital signs, thyroid enlargement, breast development, and secondary sexual characteristics, with pubertal staging assessed using the Marshall and Tanner method when needed. Systemic examinations of the central nervous, cardiovascular, respiratory, and abdominal systems were performed to identify any abnormalities. Privacy, comfort, and a patient-friendly environment were ensured, particularly for obtaining sensitive information.

Ethical Consideration

The Institutional Ethics Committee of Motilal Nehru Medical College, Prayagraj, reviewed and approved the project before it was carried out. All of the participants were informed in their own language about the study and their rights for participation before providing data for the researcher-administered questionnaire. They were informed about the participant's role and rights, to clarify that their participation was voluntary, the information was treated confidentially, and they could withdraw from the study at any time. After the collection of data, the data was cleaned, anonymised and stored in a password protected spreadsheet for data analysis.

Data Analysis

The collected data were checked for consistency, completeness and entered into Microsoft Excel (MS-EXCEL, Microsoft Corp.) data sheet. Analysed with the statistical program Statistical Package for the Social Sciences (IBM SPSS, version 22). Data were organized and presented using the principles of descriptive and inferential statistics. The data were categorized and expressed in proportions. The continuous data were expressed as mean±SD. The data were graphically presented in the form of tables, vertical bars, horizontal bar, pie diagram. Where analytical statistics were performed, a p-value of <0.05 was considered to be statistically significant for the purpose of the study.

RESULTS

The study included 500 participants, with the majority (76.6%) in late adolescence (15-19 years), while early adolescence (10-14 years) accounted for 23.4%. The mean age was 15.8 ± 2.3 years. Most participants (78.2%) had a normal BMI ($18.5\text{-}24.9 \text{ kg/m}^2$), while

11.2% were underweight and 9.4% overweight, with a mean BMI of 21.1 ± 3.1 . A significant proportion (73%) lived in rural areas, and 73.8% belonged to a lower socioeconomic background (Kuppuswamy scale). Educational levels varied: 14.4% were uneducated, 11.2% dropouts, 48.8% completed secondary education, and 16.2% pursued graduation (Table 1).

Table 1. Socio-demographic Characteristics Of The Patients (n=500)

Parameters	Mean / frequency	SD / percentage
Early adolescence (10-14)	117	23.4
Late adolescence (15-19)	383	76.6
Mean age	15.8	2.3
Unmarried	500	100%
Mean BMI	21.2	3.1
Rural residence	365	73%
Education		
Dropout	56	11.2%
Uneducated	72	14.4%
Primary	47	9.4%
Secondary	244	48.8%
Pursuing Graduation	81	16.2%
Socioeconomic status*		
Upper	5	1%
Upper middle	3	0.6%
Middle	94	18.8%
Upper lower	29	5.8%
Lower	369	73.8%

Menarche was attained by 88% of participants, with a mean age of 12.9 ± 1.4 years. Delayed menarche (1%) and primary amenorrhea (4.8%) were noted, predominantly in late adolescence. Menstrual disorders were common, affecting 67.6% overall, with a higher incidence in early adolescents (71.8%) than late adolescents (66.3%). Vaginal discharge was reported by 13.8%, breast diseases by 6%, abdominal pain by 8%, and urinary tract infections by 4%. Delayed puberty (0.2%) and abdominal lumps (0.4%) were rare (Table 2).

Table 2. Clinical Presentation OfThe Patients (n=500)

Clinical presentation	Mean ± SD / frequency (%)			p-value
	Early adolescence (n=117)	Late adolescence (n=383)	Total (n=500)	
Menarche				0.678
Delayed	0 (0)	5 (1.3)	5 (1)	
Normal	113 (96.5)	358 (93.4)	471 (94.2)	
Primary amenorrhea	4 (3.5)	20 (5.2)	24 (4.8)	
Presenting complaints				0.552
Menstrual disorders	84 (71.8)	254 (66.3)	338 (67.6)	
Breast diseases	8 (6.8)	22 (5.7)	30 (6)	
Delayed puberty	0 (0)	1 (0.3)	1 (0.2)	
Discharge per vaginam	18 (15.4)	51 (13.3)	69 (13.8)	
Lump in abdomen	0 (0)	2 (0.5)	2 (0.4)	
Pain in abdomen	3 (2.6)	37 (9.7)	40 (8)	
UTI	4 (3.4)	16 (4.2)	20 (4)	

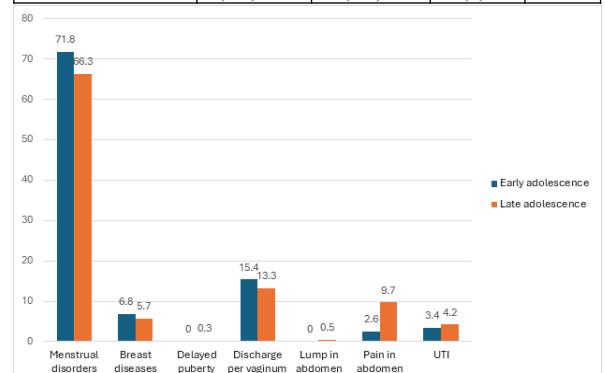


Figure 1 -Clinical presentation of the patients (n=500)

Dysmenorrhea (17.8%) was the most prevalent menstrual problem, more common in late adolescents (20.5%) than early adolescents

(9.5%). Heavy menstrual bleeding affected 15.4%, with higher rates in early adolescents (25%). Infrequent menstruation (15.1%), light menstrual bleeding (14.8%), and frequent menstruation (14.8%) were also significant, with higher prevalence in early adolescents. Primary amenorrhea (7.1%) affected 4.8% of early adolescents and 8% of late adolescents, while secondary amenorrhea (6.8%) was seen exclusively in late adolescents. Prolonged menses (5.3%) occurred solely in late adolescents, and irregular menses (3%) were more common in late adolescence (3.1%) (Table 3).

Table 3. Menstrual Problems In Patients (n=338)

Menstrual problems	Early adolescence (n=84)	Late adolescence (n=254)	Total (n=338)	p-value
Primary amenorrhea	4 (4.8)	20 (7.9)	24 (7.1)	<0.001*
Secondary amenorrhea	0 (0)	23 (9.1)	23 (6.8)	
Dysmenorrhea	8 (9.5)	52 (20.5)	60 (17.8)	
Heavy menstrual bleeding	21 (25)	31 (12.2)	52 (15.4)	
Light menstrual bleeding	16 (19)	34 (13.4)	50 (14.8)	
Frequent menses	15 (17.9)	35 (13.8)	50 (14.8)	
Infrequent menses	18 (21.4)	33 (13.0)	51 (15.1)	
Irregular menses	2 (2.4)	8 (3.1)	10 (3.0)	
Prolonged menses	0(0)	18(7)	18(5.3)	

*Statistically significant

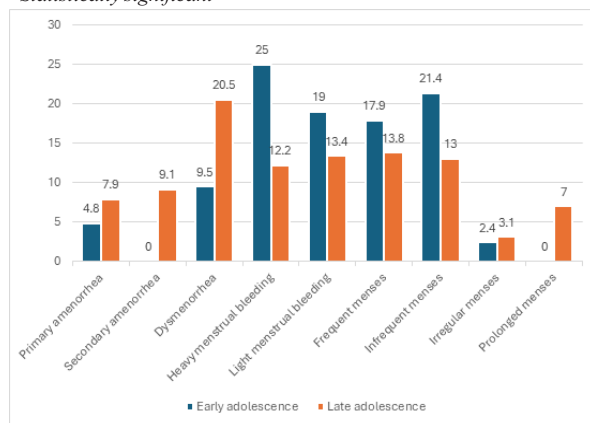


Figure 2. Menstrual Problems In Patients (n=338)

Breast complaints were dominated by breast pain (70%), reported more by early adolescents (90%) than late adolescents (60%). Breast lumps were noted in 16.7%, with late adolescents (20%) being more affected. Breast discharge, though less common (13.3%), occurred exclusively in late adolescents (Table 4).

Table 4. Breast Problems In Patients (n=30)

Menstrual problems	Early adolescence (n=10)	Late adolescence (n=20)	Total (n=30)	p-value
Breast discharge	0 (0)	4 (20)	4 (13.3)	<0.001*
Breast lump	1 (10)	4 (20)	5 (16.7)	
Breast pain	9 (90)	12 (60)	21 (70)	

*Statistically significant

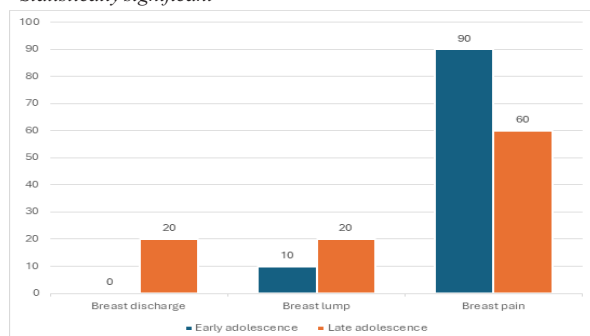


Figure 3. Breast problems in patients (n=30)

DISCUSSION

The study provides significant insights into the socio-demographic characteristics and gynaecological health of adolescent girls. A majority of participants were in late adolescence (76.6%), while early adolescence accounted for 23.4%. The mean age was 15.8 ± 2.3 years, reflecting a predominantly older adolescent population, consistent with Praveena et al., who reported a mean age of 15.94 ± 2.52 years, with a smaller married cohort (3%). Unmarried status across all participants aligns with social norms in the region. BMI analysis revealed that 78.2% of participants fell within the normal range, with 11.2% underweight and 9.4% overweight, more prevalent in late adolescents. Obesity (1.2%) was higher in late adolescents due to slower metabolism and lifestyle factors, consistent with Agrawal et al., who reported higher BMI as a risk factor for gynaecological disorders. Rural residence was dominant (73%), with Kancharia et al. similarly highlighting healthcare access barriers in rural populations.

Educational disparities were notable; 14.4% were uneducated, with a higher rate in early adolescents (32.5%) compared to late adolescents (8.9%). Dropouts were higher in late adolescence (13.1%) due to economic pressures and family responsibilities. Secondary education was achieved by 55%, while 21.1% pursued graduation, predominantly among late adolescents, highlighting educational progression with age. Low education was associated with poor health awareness, contributing to menstrual abnormalities, aligning with Mendiratta et al., who reported menstrual dysfunction in 67.7% of adolescents. Socioeconomic status was another crucial factor, with 73.8% of participants belonging to the lower socioeconomic group, similar to Gupta et al. (76.9%). Economic deprivation correlates with poor menstrual health outcomes and living conditions, as reflected in Praveena et al.'s findings.¹⁰ Middle-class participants comprised 18.8%, while upper-class representation was minimal (0.6%-1%).

Menstrual abnormalities were prevalent in 67.6% of participants, with early adolescents (71.8%) more affected due to immature hypothalamic-pituitary-ovarian (HPO) axis and nutritional deficiencies. Praveena et al. and Mendiratta et al. reported similar findings.^{10, 13} Dysmenorrhea was the most common issue (17.8%), particularly in late adolescents (20.5%), due to ovulatory cycles. Heavy menstrual bleeding (15.4%) and infrequent menstruation (15.1%) were more common in early adolescents due to anovulatory cycles. Light bleeding and frequent menses (14.8% each) were also observed. Amenorrhea affected 13.9%, with primary amenorrhea (7.1%) predominantly in late adolescents (8%), consistent with Gupta et al.'s findings. Secondary amenorrhea (6.8%) was exclusively observed in late adolescents.

Vaginal discharge was reported by 13.8%, slightly higher in early adolescents (15.4%) due to hormonal changes and immature vaginal environments. Abdominal pain (8%) was more common in late adolescents (9.7%), primarily due to ovulatory cycles and pelvic pathologies. Urinary tract infections (4%) were more prevalent in late adolescents (4.2%), often linked to sexual activity and poor hygiene, aligning with Pegu et al.'s findings (9.8%). Breast problems affected 6% of participants, particularly early adolescents (6.8%), due to hormonal changes. Breast complaints were frequent, with breast pain (70%) being most common, particularly in early adolescents (90%), due to hormonal changes and rapid development. Breast lumps affected 16.7%, with higher prevalence in late adolescents (20%), while breast discharge was observed exclusively in late adolescents (13.3%).

CONCLUSION

The present study highlights the widespread prevalence of menstrual disorders, breast complaints, and structural anomalies among adolescents, influenced significantly by socioeconomic, educational, and physiological factors.

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