

# A Cross-Sectional Study of Various Gynaecological Profiles among Adolescents Attending Outpatient Department at Dr. B.R. Ambedkar Medical College and Hospital

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## ABSTRACT

### BACKGROUND

Adolescents constitute about 21 % of Indian population. Adolescence is a period of major physiological change along with psychological and socio-behavioural changes. Issues in adolescent age group are not only different but are increasing over the years and need special consideration. Hence, as health care providers, we need to focus on young people as investing in their health today will reap rich rewards tomorrow. Our study focusses on the incidence of adolescents attending gynaecology outpatient department (OPD) and the different gynaecological profiles in adolescents attending OPD.

### METHODS

351 adolescent girls in the age group of 10 - 19 years attending gynaecological OPD of Dr. BRAMC, Bengaluru, from February' 19 to January' 20 were included in the study. All the adolescents presenting with various gynaecological profiles were evaluated by detailed history taking and thorough clinical examination after taking an informed consent.

### RESULTS

There were 351 adolescent girls (5.37 %) attending the gynaecology OPD during the study period. Teenage pregnancy (38.4 %) was the commonest indication for OPD consultation among adolescent girls followed by irregular cycle (17.9 %). Pain abdomen, anaemia, white discharge per vagina (WDPV), urinary tract infections (UTI), polycystic ovarian syndrome (PCOS), heavy menstrual bleeding, breast pain, breast enlargement were few other complaints encountered during this study.

### CONCLUSIONS

Teenage pregnancy and menstrual abnormalities are the most common issues seen in adolescents. Adolescent gynaecology needs increased awareness and greater attention. This can perhaps best be done by setting up specialised adolescent clinics and it is the need of the hour to protect and promote the health of teenagers.

### KEYWORDS

Adolescents, Teenage Pregnancy, Menstrual Irregularities, Gynaecological Problems, Gynaecological Profile, Adolescent Issues

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## BACKGROUND

Adolescence (Latin: *adolescere*-to grow) is the period of life during which the carefree child becomes a responsible adult. The period varies in duration from one individual to another and is difficult to define<sup>1</sup>. A modern description of the adolescent is the "teenager".

"No longer a child, not yet a woman", is a line which captures the ethos of adolescence beautifully. This is a time of transition from childhood to becoming responsible adults. The changes are not only physical and sexual, but also emotional and mental<sup>2</sup>.

World Health Organization (WHO) defines adolescent as an individual in the age group of 10 - 19 years. Adolescence can be defined biologically as the physical transition marked by the onset of puberty and socially as a period of preparation for adult roles and marks a time of rapid and intense emotional and physical changes. Their needs vary with their sex, stage of development, life circumstances and the socioeconomic conditions of their environment. The gynaecological issues that adolescents present with are unique, special and specific for the age group. Failure to diagnose and treat conditions like congenital defects, neglected infections acquired in childhood, endocrinopathies, physical and psychological trauma of sexual abuse and tumours can cast their shadow on future reproductive health of the individual.<sup>3</sup> Menstrual abnormalities are common in adolescents. They are also ignorant and shy about it. Embarrassment about discussing menstruation and fear of unknown may delay their appropriate treatment. Any organic pathology should be evaluated timely so as to improve the quality of life. Setting up of separate adolescent clinics is desirable for efficient management.<sup>2</sup>

A large variety of morbidities prevail among adolescents. Reproductive tract infections (RTI), sexually transmitted infections, human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV / AIDS) have already appeared as serious problems. One of the specific targets of the sustainable development goal (SDG) is good health and well-being. It is essential to ensure universal access to reproductive health care services, including menstrual hygiene and menstrual disturbances, better access to contraceptive information and services, so that unwanted pregnancies can be avoided.<sup>4</sup> Adolescent gynaecology is a subspecialised area of gynaecology which has still not been explored optimally.<sup>5</sup>

Teenage pregnancy is considered as high-risk pregnancy and is a common tribulation in developing countries like India. Pregnancy in teenagers is a problem threatening the ultimate reproductive and child health. These girls often do not have safe sex and are vulnerable to sexually transmitted diseases. Moreover, after getting pregnant, to avoid social suffering, they go to quacks and undergo criminal abortion in unauthorised locations and land up with serious complications and chronic pelvic inflammatory disease, which affect their reproductive health in future.<sup>6</sup>

Adolescents have the lowest mortality among the different age groups and have therefore received low

priority. Nutritional deprivation, increased demand of adolescent's body, and excessive menstrual loss, all aggravate and exacerbate anaemia and its effects.

### Objectives

1. To study the prevalence of adolescents attending gynaecology OPD
2. To study the different gynaecological profiles in adolescents attending OPD.

## METHODS

This prospective cross-sectional study of "various gynaecological profiles among adolescents" was conducted after approval from the institutional ethical committee in the Department of Obstetrics and Gynaecology, Dr. B.R. Ambedkar Medical College, Bengaluru, Karnataka, from February 2019 to January 2020.

351 adolescent females attending the OPD were registered for the study after taking an informed consent and after being evaluated by detailed history-taking and thorough clinical examination including weight, height and secondary sexual characters. Investigations and diagnosis was done and were treated accordingly.

### Inclusion Criteria

- All adolescent females between the age group of 10 to 19 years attending our obstetrics (OBG) OPD and consenting for the study.

### Exclusion Criteria

- Any adolescents not willing to participate in the study.
- Any adolescent previously interviewed and coming for follow up for similar complaints (to prevent bias).

### Sample Size Calculation

The study required a minimum of 341 subjects to get 20 % relative precision with 95 % confidence level in the result, considering the result based on the study by Anandhi, Gunasingh and Kalaivani (2017)<sup>4</sup> where the common problems in adolescent girls attending gynaecology OPD was anaemia 60 % followed by menorrhagia (31 %) and dysmenorrhoea (22 %).

### Statistical Analysis

Descriptive statistics of common problems in adolescent girls were summarised with percentage. Chi-square test was used to find the association of age and marital status on UTI, irregular cycle, anaemia, bleeding. etc. Data was analysed using SPSS Inc. released 2009. PASW statistics for Windows, version 18.0. Chicago. P < 0.05 was considered as statically significant.

**RESULTS**

In the present study, it was found that out of a total of 6536 women attending the outpatient department (OPD) of Dr. BRAMC, Bengaluru during the study period, 351 (5.37 %) were adolescents in the age group of 10 - 19 years.

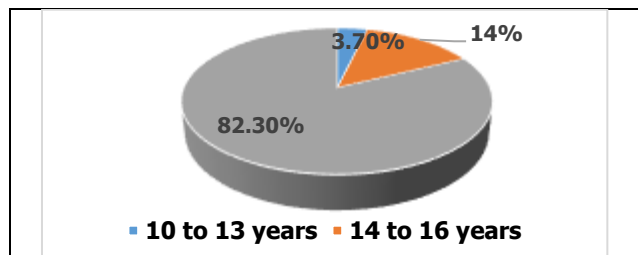


Figure 1. Age Distribution of the Study Participants

Marital Status	Number	Percentage	10 - 13 Years	14 - 16 Years	17 - 19 Years
Married	79	22.5 %	0	1	78
Unmarried	272	77.5 %	13	48	211
<b>Total</b>	<b>351</b>	<b>100.0 %</b>	<b>13</b>	<b>49</b>	<b>289</b>

**Table 1. Marital Status of the Adolescent Girls in the Study**  
 $\chi^2 = 18.87, df = 2, P < 0.001^*$

In the present study, maximum adolescent girls attending gynaecological outpatient department had ages in the range of 17 - 19 yrs. i.e. 82.3 %, followed by 14 - 16

yrs. accounting for 14 %, and then 10 - 13 yrs. accounting for 3.7 % (Figure 1).

Most of the adolescent girls were unmarried accounting for 77.5 %, only 22.5 % were married before the age of 19 years and 1 (one adolescent girl) got married before the age of 17 years in the present study. There was significant difference in marital status with respect to age distribution (Table 1).

Table 2 enumerates the various types of gynaecological profile encountered in the present study groups. Teenage pregnancy was the most common (38.5 %) problem in 17 - 19 years age group (99.3 %). Menstrual irregularity (17.9 %) was the second most frequent cause for adolescents seeking professional advice and seen most commonly in 17 - 19 years of age group (61.9 %) again. Other conditions noted in descending order were pain abdomen seen in 13.7 %, anaemia accounting for 9.7 % cases, white discharge per vagina seen in 9.7 %, urinary tract infections accounting for 8.3 % of cases, polycystic ovarian syndrome seen in 7.1 % of adolescents, heavy menstrual bleeding per vagina accounting for 3.7 % cases, breast pain seen in 0.9 % of adolescent girls and breast enlargement accounting for 0.3 % of cases. There was significant association between teen age pregnancy, irregular cycle, bleeding per vaginum (PV), anaemia and breast enlargement with respect to age distribution.

		Age						P Value		
		10 - 13 Years		14 - 16 Years		17 to 19 Years			Total	
		Count	%	Count	%	Count	%	Count	%	
WDPV	No	10	76.9 %	42	85.7 %	265	91.7 %	317	90.3 %	0.106
	Yes	3	23.1 %	7	14.3 %	24	8.3 %	34	9.7 %	
UTI	No	11	84.6 %	48	98.0 %	263	91.0 %	322	91.7 %	0.167
	Yes	2	15.4 %	1	2.0 %	26	9.0 %	29	8.3 %	
Pain abdomen	No	12	92.3 %	40	81.6 %	251	86.9 %	303	86.3 %	0.503
	Yes	1	7.7 %	9	18.4 %	38	13.1 %	48	13.7 %	
Teenage pregnancy	No	13	100.0 %	48	98.0 %	155	53.6 %	216	61.5 %	< 0.001*
	Yes	0	0.0 %	1	2.0 %	134	46.4 %	135	38.5 %	
Irregular cycle	No	8	61.5 %	30	61.2 %	250	86.5 %	288	82.1 %	< 0.001*
	Yes	5	38.5 %	19	38.8 %	39	13.5 %	63	17.9 %	
PCOS	No	13	100.0 %	44	89.8 %	269	93.1 %	326	92.9 %	0.424
	Yes	0	0.0 %	5	10.2 %	20	6.9 %	25	7.1 %	
Breast pain	No	13	100.0 %	49	100.0 %	286	99.0 %	348	99.1 %	0.723
	Yes	0	0.0 %	0	0.0 %	3	1.0 %	3	0.9 %	
Bleeding PV	No	12	92.3 %	43	87.8 %	283	97.9 %	338	96.3 %	0.002*
	Yes	1	7.7 %	6	12.2 %	6	2.1 %	13	3.7 %	
Anaemia	No	13	100.0 %	48	98.0 %	289	100.0 %	350	99.7 %	0.045*
	Yes	0	0.0 %	1	2.0 %	0	0.0 %	1	0.3 %	
Breast enlargement	No	12	92.3 %	49	100.0 %	289	100.0 %	350	99.7 %	< 0.001*
	Yes	1	7.7 %	0	0.0 %	0	0.0 %	1	0.3 %	

Table 2. Gynaecological Profile with Respect to Age Distribution among Adolescents

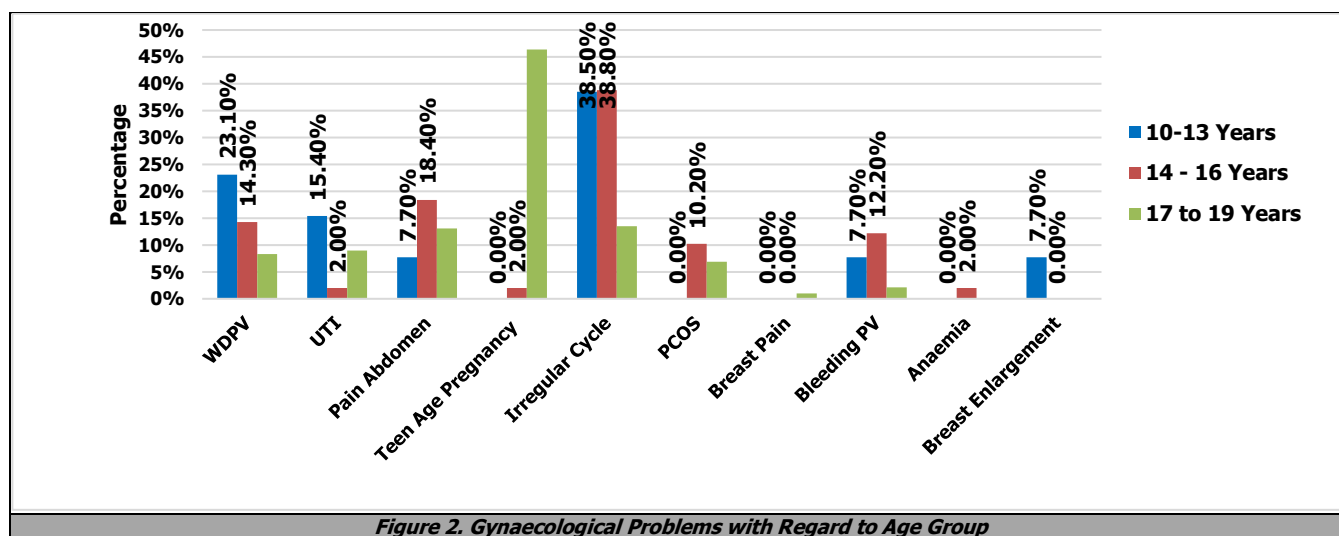


Figure 2. Gynaecological Problems with Regard to Age Group

In the present study, among 9.7 % of anaemic adolescents, 58.8 % presented with menstrual disorder, 32.3 % were teenage pregnancy, 8.8 % presented with heavy menstrual bleeding, 26.4 % had severe anaemia (Haemoglobin-Hb < 7 gm %) who required blood transfusion.

In the present study among 38.5 % of adolescent girls with teenage pregnancies, 17.7 % were diagnosed with pre-eclampsia and 8.1 % were anaemic.

## DISCUSSION

Adolescent youth represents the energy of the present and the hope for the future. It is a crucial period in life and during growth. Adolescence is also the period when the girl is getting prepared for her reproductive roles in future. Only healthy and fit adolescent seedlings of today can evolve into a beautiful tree of future. To improve the health status of adolescents, the first step to be taken is the assessment of their specific health problems.

Adolescent gynaecology is unique subspecialty which includes paediatrics and gynaecology. Diagnosis and adequate treatment of gynaecological problems require collaboration from more than one specialty. Many nations have encouraged medical education and research in the field of paediatric and adolescent gynaecology (PAG). Adolescent gynaecology is not a new subject, but it needs increasing awareness and further attention.

Adolescents present with a whole lot of different sets of gynaecological burden like teenage pregnancy, menstrual disorders, white discharge per vagina, urinary tract infections, breast related complications and anaemia are some of the most commonly encountered problems in adolescents attending OPD.

In the present study of 351 adolescent girls, 3.7 % (13) belonged to age group of 10 - 13 years, 14 % (49) belonged to age group 14 - 16 years and 82.3 % (289) belonged to 17 - 19 years. This is comparable to the study conducted by Cheenepalli Anuradha et al.,<sup>3</sup> where the 10 - 14 years age constituted to 11 % (32 cases) and 15 - 19 years age group comprised of 89 % (279 cases). Teenage pregnancies accounted for 38.5 % in our study.

In a study by Chanda Karki et al. teenage pregnancies accounted for 56.33 %.<sup>7</sup> Teenage pregnancies accounted for 4.03 % of (5 / 124) cases in the study conducted by Goswami Sebanti et al.<sup>8</sup> In a study conducted by Kumar et al., teenage pregnancy was found to be associated with a significantly higher risk of pregnancy induced hypertension, pre-eclamptic toxemia and eclampsia, premature onset of labour, fetal deaths and premature delivery. Increased neonatal morbidity and mortality were also seen in babies delivered to teenage mothers. Younger teenager group (< 17 years) was most vulnerable to adverse obstetric and neonatal outcomes.<sup>9</sup> Among 38.4 % teenage pregnancies, 17.7 % were diagnosed with pre-eclampsia, 8.1 % were anaemic in that present study.

In the present study, menstrual irregularity was the second commonest problem in adolescent age group accounting for 17.9 % most commonly seen in age group of

17 - 19 years (61.9 %). Among them 20 (31.7 %) were anaemic and 1 (1.5 %) girl presented with hypoplastic uterus and ovaries.

In a study conducted by Prakriti Goswami et al., menstrual disorders were the most common gynaecological problems amongst adolescents accounting for 58.06 %, ranging from amenorrhoea to menorrhagia; 6.66 % had primary amenorrhoea, 17.7 % had secondary amenorrhoea.<sup>6</sup> Goswami Sebanti et al.<sup>8</sup> conducted a study on 124 adolescent girls attending gynaecological OPD and concluded that menstrual disorders were the commonest gynaecological problem (58.06 %). They varied from amenorrhoea (29.16 %) to menorrhagia in their study.

Archana Kumari et al. found to have menstrual disorders in their study group accounting for 74.1 %.<sup>10</sup> In our study, adolescent girls diagnosed with polycystic ovarian syndrome were 7.1 % which was comparable with a similar study conducted by Archana D. Rathod et al. (5.64 %)<sup>11</sup>. Most of the patients were under obese category and presented with either amenorrhoea, oligomenorrhoea with weight gain. Bhattacharya and Jha (2011) studied 96 adolescent girls. 51 (53.13 %) of them had PCOS. Polycystic ovarian disease in 17 (43.58 %) adolescents was the commonest cause for oligomenorrhoea.<sup>12</sup>

In our study, adolescent girls coming with complaints of pain abdomen mostly due to dysmenorrhoea was 13.7 %, whereas in the study conducted by Cheenepalli Anuradha et al. dysmenorrhoea was present in 42 % cases.<sup>3</sup>

In our study, white discharge per vagina was present in 9.7 %, mostly seen among adolescents of 17 - 19 years age group. In Cheenepalli Anuradha et al. study, white discharge per vagina was major gynaecological problem comprising of 28.9 %, they found candidiasis & trichomonas vaginitis to be the commonest causes of pathological discharge among married & unmarried adolescents respectively.<sup>3</sup> In another study, Ramaraju H.E et al. showed vaginal discharge was the second commonest complaints comprising of 17 % cases which were all diagnosed as physiological leucorrhoea and responded to counselling and maintenance of hygiene.<sup>13</sup> Sexually transmitted infections (chlamydia, human papilloma virus and herpes simplex virus infection) is reported in 8 to 27 % of adolescent girls in Western countries.<sup>14</sup>

In the present study, among 9.7 % of anaemic adolescents, 58.8 % presented with menstrual disorder, 32.3 % were teenage pregnancy, 8.8 % presented with heavy menstrual bleeding, 26.4 % had severe anaemia (Hb < 7 gm %) who required one or more than one blood transfusions.

The prevalence of anaemia in the Dipali Prasad et al. study was 8.33 %.<sup>5</sup> In Archana D. Rathod et al. study 17.52 % had anaemia and required hospitalisation for correction of anaemia and management of menorrhagia.<sup>11</sup>

In our study, around 8.3 % of adolescent population presented with burning micturition and were diagnosed to be urinary tract infections after urine investigations. Cheenepalli Anuradha et al. study found urinary tract infections to be prevalent among 3.2 % adolescent presenting to them.<sup>3</sup>

In the present study, heavy menstrual bleeding was noted among 3.7 % of adolescent study group, among whom 30.7 % were found to be anaemic. In the study conducted by Cheenepalli Anuradha et al. heavy menstrual bleeding was noted in 14 % of adolescent girls, among whom severe anaemia patients requiring multiple blood transfusions were 14 %.<sup>3</sup>

In our study among adolescent girls' breast related complaints were present among four girls, 0.9 % presented with breast pain / mastalgia and 0.3 % presented with asymmetric breast enlargement. Snehal Samarth et al. found breasts related complaints among 15.58 % adolescents of whom premenstrual mastalgia was seen in 9.03 % cases, lipoma of breast in 2.18 % and asymmetry of breasts in 2.49 %.<sup>2</sup>

### CONCLUSIONS

Adolescents present with a variety of gynaecological baggage. Adolescent gynaecological problems are unique and specific regarding presentation, diagnosis and management of their concerns is important for their future reproductive health. Careful and detailed history, thorough examination and a good pathology lab and ultrasound support are required to diagnose the menstrual disorders accurately and to identify their causes.

Adolescent problems especially teenage pregnancy needs to be dealt with sensitively. Counselling is an integral component of treatment strategies. Safe sex practices, sexually transmitted infections specially HIV and emergency contraception should be included in sex education to prevent teenage pregnancies. Health education on menstrual hygiene is essential along with healthy lifestyle practices like games and meditation. Yoga must be encouraged in adolescent girls.

Adolescent gynaecology is not a new subject but needs increasing awareness and further attention in the present scenario to protect and promote the health of teenagers. This can perhaps best be done by setting up specialised "Adolescent Gynaecological Clinics".

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.

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