

## Documentation of Gynecological Morbidities among Adolescent Girls and their Sociodemographic Determinants

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### Abstract

**Introduction:** WHO defines Adolescence is the age group between 10 to 19 years [1]. It is a transitional stage from appearance of secondary sexual characters to sexual maturity. Today every fifth person in India is an adolescent [3]. Adolescent health is important as they are demographic force, economic force, future health of nation and they have right to participate.

**Aims and Objectives:** 1 To study the magnitude of different gynaecological morbidities in adolescent girls attending out patient department of obstetrics and gynaecology in new civil hospital, Surat. 2 To study the socio-demographic determinants and nutritional status.

**Methods:** A observational study conducted including total 197 consenting subjects between age 11-19 years attending out patient department of our tertiary care hospital Surat. After detailed history taking, general and gynaecological examination was done followed by if needed investigations include hemogram, coagulograms, hormonal survey, sonography and other radiological investigations done. Data analysis done by Microsoft excel and open EPI software.

**Results:** Menstrual disorders found to be the commonest gynaecological problems (76.14%) includes irregular menses, amenorrhoea, dysmenorrhoea. DUB was the commonest among irregular menses. Statistical significance found between PCOD and high BMI and socioeconomic class, puberty menorrhagia and

dysmenorrhoea found statistically significant with age of 14-16 years, genital infections with married adolescents.

**Conclusion:** In Adolescents menstrual disorders are more common but other problems also significant so scared resources should be directed for their health so future generation health can be improved. Correlated factors can be used in their prevention strategies.

**Keywords:** Adolescent girl; Gynecological morbidity; Menstrual abnormalities.

### Introduction

WHO defines Adolescence is the age group between 10 to 19 years [1]. It is a transitional stage from appearance of secondary sexual characters to sexual maturity. India has largest adolescent population in the world [2]. Today every fifth person in India is an adolescent [3]. Out of total 1205.6 million population of India 236.5 million are adolescents according to census 2011. Sex ratio is 898 girls per thousand boys so Adolescent girls contribute up to 10% of total population. Adolescents counts 20% of female population according to Adolescent population project 1996. There contribution is significant enough in any group of population but they are ignored by policy

makers, health planners as well as researchers which leads to serious health hazards in later life due to these neglected reproductive health problems which is leading cause of women's ill health and death worldwide [3]. Adolescent health is important as they are demographic force, economic force, future health of nation and they have right to participate. Development makes them more vulnerable to lot of health issues related to development because increased demand of body, menstrual loss, nutritional deprivation especially in India where gender discrimination is on heights. That's why this age group requires special attention. In India majority of adolescent girls suffering from gynaecological morbidities (Agarwal S et al. 2007; Sharma et al. 2008) these are defined as 'any condition, disease, dysfunction, of reproductive system which is not related to pregnancy, abortion, and child birth' [4]. Like menstrual irregularities, dysmenorrhoea, genital infections, urinary tract infections, sexual assault.

In India, a country of lots of cultural spirits but also taboos, illiteracy, ignorance, gender discrimination, poor social status so these problems are not considered as significant health problems leads to reduced rate of early diagnosis and their management. So those are seeking health care demographically coordinating their morbidities, we can plan policy for prevention of these problems among those who are not seeking health care so proper allocation of resources can occur so when good health information and services made available and accessible to adolescents countless missed opportunity can be picked up.

### **Aims and Objective**

1. To study magnitude of different gynaecological morbidities in adolescent girls attending outpatient department of Tertiary Care Hospital.
2. To study the socio-demographic determinants and nutritional status.
3. To study the statistical significance between socio-demographic factors and gynaecological morbidity.

### **Materials and Methods**

This observational study enrolled 197 consenting

adolescents (age 11-19 years) coming to out patient department of New Civil Hospital Surat between June 2017 to May 2018 after obtaining consent from the participant and her parent/legal guardian. The presenting complaints of adolescents along with socio-demographic parameters noted. A detailed menstrual history and if married obstetric history was taken. Any significant past history, family history, drug history and history of blood transfusion was noted.

The details of height and weight were noted and BMI calculated. Nutritional assessment done by using Age-Growth-BMI chart for girl. General and systemic examination done.

A Provisional diagnosis was made on basis of history and examination findings. Investigations included complete blood count, blood group, thyroid profile, other hormone level assessment, coagulation profile, urine examination, abdominal and pelvic ultra sono graphy, computed tomography or magnetic resonance imaging according to subjects requirement.

Entries were done in the Performa and data analysis was done using Microsoft excel and open EPI software.

#### *Inclusion criteria*

- All adolescent girls attending out patient department of our tertiary care centre with gynaecological complaints.

#### *Exclusion criteria*

- Adolescents with obstetric problem.
- Adolescents not willing to participate.

### **Observation and Discussion**

In the observational study 197 consenting subjects of 11-19 year girls coming to Gynaecology demographic details, complaints, examination findings, investigations, provisional and final diagnosis were studied. The first table 1 represents the socio-demographic characters of subjects.

Observation of all 197 study subject with respect to their age, age of menarche, socioeconomic status (Modified Kuppaswami classification), marital status, educational status of subject's herself, educational status of mother, and BMI (body mass index) is as follows;

**Table 1:** Socio-Demographic Profile

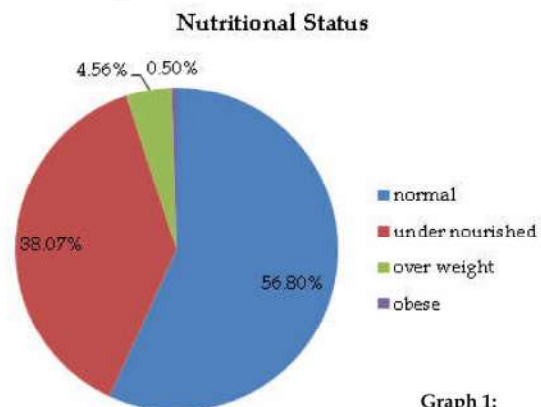
Variables	Number	Percentage	Variables	Number	Percentage
Distribution of patients according to age in completed years.			Distribution of patients according to socioeconomic status		
11-13 years	15	7.61%	I	05	2.53%
14-16 years	69	35.02%	II	35	17.76%
17-19 years	113	57.36%	III	77	39.0%
Total	197	100%	IV	59	29.94%
Distribution according to age at menarche in completed years.			V	21	10.65%
11-13 years	112	62.22%	Total	197	100%
14-16 years	67	37.22%	Distribution according to marital status		
17-19 years	1	0.5%	Married	34	17.25%
Total	180	100%	Unmarried	163	82.74%
Distribution according to patient education			Total	197	100%
Illiterate	08	4.06%	Distribution according to mother's education		
Primary	22	11.16%	Illiterate	72	36.54%
Secondary	103	52.28%	Primary	30	15.22%
Higher secondary	35	17.76%	Secondary	59	29.94%
Graduation	29	14.72%	Higher secondary	25	12.69%
Total	197	100%	Graduation	11	5.5%
Distribution according to BMI			Total	197	100%
<19	132	67.00%			
19-25	55	27.97%			
25-30	09	4.56%			
>30	01	0.50%			
Total	197	100%			

- Majority of study subjects, 113 (57%) were in the 17 to 19 years age group.
- 35% of the study subjects were in the 14 years to 16 years of age group.
- Only 7.61% study subjects were in the 11 years to 13 years of age group.
- So this age wise distribution suggests that gynaecological morbidities were less common in the 11-13 years age group, probably because the mean age at menarche in our study was 13 years.
- The mean age in this study is 16.7 years with standard deviation of 2.11 years.
- Majority (39%) of the subjects belonged to Class III probably because patients of this group most commonly visit our hospital, followed by Class IV (29.94%) and Class V (10.65%).
- Only 2.51% belonged to Class I.
- Out of total 197 subjects, 34 subjects, (17.25%) were married revealing that early marriages are not uncommon in our study area.
- 82.74% subjects of the study were unmarried.
- Educational status of subjects presented in table shows majority of subjects were literate only 4.06% subjects found illiterate.
- According to first table 67.00% of subjects had BMI <19.
- 27.97% subjects had BMI between 19-25.
- Only 4.56% study subjects had BMI between 25-30.

We used the BMI-age-growth chart in which for subjects 11-19 years,

- BMI falls in between 5<sup>th</sup> to 85<sup>th</sup> percentile considered "normal".
- BMI falls in between 85<sup>th</sup> to 95<sup>th</sup> percentile considered "overweight".
- BMI more than 95<sup>th</sup> percentile considered "obese" and BMI less than 5<sup>th</sup> percentile considered "undernourished".

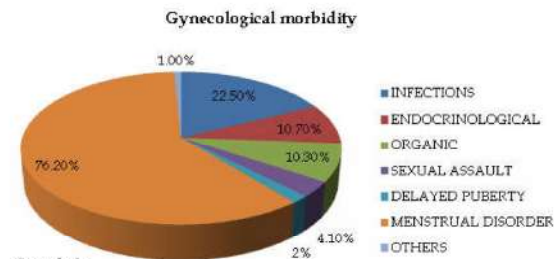
So according to this distribution of subjects shown only one adolescent had BMI >30.

**Graph 1:**

**Table 2:** Distribution of Subjects According to Morbidity

Aetiology	Number	Percentage
Infections		
UTI	09	4.6%
Candidiasis	16	8.2%
Bacterial vaginosis	08	4.1%
PID	08	4.1%
Genital tuberculosis*	03	1.5%
Endocrinological		
PCOD*	15	7.6%
Hyperprolactinemia*	01	0.5%
Hypothyroidism*	05	2.6%
Organic Ovarian mass		
Benign*	15	7.6%
Malignant*	02	1.1%
Polyp *	02	1.1%
Fibroid	01	0.5%
Sexual assault	08	4.1%
Delayed puberty	04	2.0%
Menstrual disorders Amenorrhoea		
Primary	11	5.6%
Secondary*	10	5.1%
Dysmenorrhoea		
Primary	24	12.2%
Secondary	02	1.1%
Abnormal uterine bleeding	103	52.28%
Others	02	1.1%

Many subjects had more than one gynaecological morbidity.

**Graph 2:**

The details are as follows:

Amongst infections, which counts almost 22.5% spectrum in our study includes, Urinary tract infection were present in 9 subjects (4.56%) out of 197 subjects. Diagnosis made on urinary symptoms and urine routine micro examination finding.

Vaginal discharge is third most common symptom and second most commonly made diagnosis, includes candidiasis, bacterial vaginosis, pelvic inflammatory disease in our study. Candidiasis were found in 16 subjects (8.12%), bacterial vaginosis were found in 8 subjects (4.06%) and PID were in 8 subjects (4.06%). Three subjects (1.5%) were diagnosed as cases of genital tuberculosis out of them 2 presented with menstrual abnormality and one of them presented with lower abdominal pain.

**Endocrinological** abnormalities found in 10% study subjects, includes hypothyroidism, hyperprolactinemia, PCOD. Hypothyroidism were present in 5 subjects (2.6%), presented with abnormal uterine bleeding. Hyperprolactinemia was present in one study subject presented with secondary amenorrhoea. PCOD found in 15 subjects (7.61%) diagnosis based on Rotterdam criteria includes menstrual symptoms, features of hyperandrogenism, and ultra sonography findings of ovary. These subjects presented with oligomenorrhoea, hypomenorrhoea, secondary amenorrhoea with acne, hirsutism.

**Organic** causes had total 17 subjects of ovarian mass includes malignant (02) and benign (15) both and 2 subjects of polyp. In both subjects with malignancy surgical management done followed by chemotherapy. Benign cases had simple cyst (07), haemorrhagic cyst (05), complex cyst (01), infection leads to tuboovarian mass(01) and ovarian cyst with torsion (01). Most of them managed by conservatively. Surgical management done in a subject in which cyst size were more than 10 cm and one with torsion. Menometrorrhagia was the presenting symptom in both subjects of polyp, surgical management done in both. One subject diagnosed as case of intramural fibroid presented with lower abdominal pain.

**Sexual assault** was in 8 subjects (4.06%) which is a huge number for any society!!

**Delayed puberty** found in 4 subjects (2.03%) those presented to us with amenorrhoea with normal secondary sexual characters of more than 16 years of age with normal hormonal profile and attained menses in follow up visit.

Amongst **menstrual disorder** Primary amenorrhoea was present in 11 subjects (5.5%) in which one subject with imperforate hymen, MRKH in 4 subjects and 4 subjects were diagnosed as turner syndrome, 2 subjects were having hypoplastic uterus. Out of 4 MRKH patients 2 were having renal malformation also. 5.1% subjects had Secondary amenorrhoea. When further evaluated, out of 10, four were diagnosed as cases of PCOD. Out of remaining 6 one of them was having secretion from breast, serum prolactin level advised and her serum prolactin level was 45 ng/dl diagnosed as case of hyperprolactinemia, one study subject presented with oligomenorrhoea and hypomenorrhoea followed by amenorrhoea of 2 years with complain of hot flushes, her oestrogen and progesterone level are of postmenopausal range and serum LH and FSH were raised with normal thyroid function test diagnosed as a case

of pre mature ovarian failure. Other causes include atrophic uterus (01) and hyperandrogenimia (01) and in rest 2 subjects diagnosis could not made out as subjects lost to follow up.

Total 26 subjects (13.19%) suffering from dysmenorrhoea out of them Spasmodic Dysmenorrhoea was present in 24 study subjects and only 2 subjects were having congestive dysmenorrhoea both of them were case of ovarian mass, one benign and another malignant. These cases were having problem severe enough that their quality of life was affected.

Statistically significance found if p value is less than 0.001. So in current study statistical significance found as below;

- Menorrhagia subjects and their age distribution ( $p < 0.001$ ). It is more common in age between 14-16 years. As mean

age of menarche is 13 years and puberty menorrhagia is due to immature HPO axis which attain maturity 2-3 years later. So menorrhagia is more common in 14-16 years age group.

- Dysmenorrhoea also found statistically significant ( $p=0.00005$ ) in current study with age distribution. More common in age group 14-16 years which is also explained in the same way as mean age of menarche is 13 years in our study.
- PCOD also found statistically significant with socioeconomic status ( $p=0.0000001$ ) more found in higher socioeconomic class and more in subjects with BMI > 25 ( $p=0.0000001$ ).
- Genital infection statistically significant, more in married girls (0.0000001).

**Table 3: Statistical Relation with Sociodemographic Variables**

Sociodemographic variables	N=197	DUB (except PM) N=44	DM N=26	PM N=26	PCOD N=15	GI N=32
<i>Socioeconomic class</i>						
I	05	01 (2.2%)	00 (00%)	00 (00%)	04 (26.6%)	00 (00%)
II	35	08 (18.2%)	04 (15.4%)	05 (19.2%)	01 (6.6%)	05 (15.6%)
III	77	12 (27.3%)	11 (42.3%)	14 (53.8%)	05 (33.3%)	12 (37.5%)
IV	59	19 (43.2%)	10 (38.4%)	04 (15.4%)	05 (33.3%)	09 (28.1%)
V	21	04 (9.1%)	01 (3.8%)	03 (11.5%)	00(00%)	06 (18.7%)
p value		0.24	0.56	0.32	<0.001	0.4808
<i>Age (years)</i>						
11-13	15	1 (2.2%)	0 (00%)	07 (27%)	00 (00%)	01 (3.1%)
14-16	69	18 (40.1%)	19 (73%)	15 (57.7%)	03 (20%)	05 (15.6%)
17-19	113	25 (56.8%)	07 (27%)	04 (15.3%)	12 (80%)	26 (81.25%)
p value		0.26	<0.001	<0.001	0.1546	0.0115
<i>Marital status</i>						
Married	34	09 (20.5%)	01 (3.8%)	1 (3.8%)	2 (13.33%)	16 (50%)
Unmarried	163	35 (79.5%)	25 (96.2%)	25 (96.2%)	13 (86.6%)	16 (50%)
p value		0.26	0.052	0.02	0.6755	<0.001
<i>BMI</i>						
<19	132	35 (79.5%)	22 (84.6%)	18 (69.3%)	01 (6.6%)	20 (62.5%)
19-25	55	09 (20.5%)	04 (15.4%)	08 (30.7%)	07 (46.6%)	11 (34.3%)
>25	10	00 (00%)	00 (00%)	00 (00%)	07 (46.6%)	01 (3.1%)
p value		0.06	0.1006	0.44	<0.001	0.614

### Conclusion

As adolescent girls are future of next generation and their importance is not negotiable, considering them and their health issues, it is important to identify problems among them and manage them. Adolescence is the age where gynaecological problem especially menstrual problems are more common which can be easily identifiable and treatable. Socio-demographic data is useful to identify the more prone group which should be subjected to investigation and managed accordingly so assessing their problems and providing accordingly management in country like ours where sources are scarce and improving awareness among them so prevention can be done.

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