*Review Article*

Indian Journal of Ancient Medicine and Yoga
Volume 7 Number 4, October - December 2014

# Awareness on Menstrual Health and its Associated Disturbances in Urban Adolescent Females: A Survey Study

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**Abstract**

The major disturbances among the menstrual disorders are seen in the form of irregular cycles which has been emphasized by many medical interviews ranging from 5-16%.[3] Most of the adolescents presenting with irregular cycles are associated with PCOS whose incidence is estimated to be between 11 & 26 %[9] and about 50% are overweight. These problems improperly addressed during adolescence may result as cause for infertility in the married women. Hence this study was carried out to investigate the awareness on current issue in college going adolescent girls. A cross sectional study was conducted on 209 girls. A self-administered questionnaire consists of the questions on awareness, knowledge on menstruation & PCOS is used for data collection. The mean age of respondents was 17.5yrs and the mean age attained at menarche was 13.5 yrs. Data revealed that there is general lack of awareness about knowledge on menstrual cycles in 48-50% of the adolescents. Most of them (60%) are not aware of the condition Polycystic Ovarian Syndrome though they are presenting with its clinical features. Hence there is need to educate the adolescents about the normal menstruation and the most prevalent disorder called Polycystic Ovarian Syndrome.

## Introduction

The major social and medical problems for women accounting for high percentage of gynecological visit are disturbances of menstrual bleeding. Menstrual problems are generally perceived as only minor health concerns and thus irrelevant to the public health agenda, particularly for women in developing countries who may face life-threatening conditions.[1] Menstruation onset is marked as begin of adolescence. Adolescence is the period of transformation of female to attain the ability of reproduction. One of the major challenges before every adolescent girl is to handle menstruation which is a normal body function in females. Though menstruation is an important reproductive health function, yet it has been dealt with secrecy in India.[2] The major disturbances among the menstrual disorders are seen in the form of irregular cycles which has been emphasized by many medical interviews ranging from 5-16%.[3] Amenorrhea and oligomenorrhea are most common conditions prevailing in the adolescent female which are often the result of anovulation due to an immature hypothalamic-pituitary-ovarian axis. These problems that have not been addressed during adolescence may result as cause for infertility in the married women. The normal menstruation is understood that age of menarche < 16 years, with length of cycle 24-32 days, length of flow 3-7 days and amount of bleeding < 80ml. The normal cycle relies on the on the action and interaction of the hormones released from hypothalamo–pituitary-ovarian axis and their effect on the endometrium.[4,5]

Most of the adolescents presenting with

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irregular cycles are associated with obesity and PCOS. Adolescents with BMI >_ 32.5 kg/m$^2$ had approximately 2.0(95% of CI: 1.6, 2.4) and 1.5 (95% CI: 1.3, 1.9) higher odds for irregular or failing to become pregnant, respectively, than women with B.M.I 20-24.9 kg/m$^2$.[6] Many other previous studies also indicated that obesity associated young females suffered with ovulatory infertility[7] and menstrual related problems in later life.[8] The incidence of PCOS among adolescents is estimated to be between 11 & 26%[9] about 50% are overweight. Though PCOS is a common disorder, the diagnosis may be overlooked during adolescence, as irregular menses with anovulatory cycles and obesity. Many studies establish the general lack of awareness on the menstruation and its abnormalities among the adolescent girls.[5, 10]

This study was carried out to investigate the awareness on knowledge of menstrual cycles and its associated disturbances like obesity and PCOS in college going adolescent girls. This information will be helpful in knowing the magnitude of the awareness and hence forth reforming the health education activities about the awareness programs on normal and abnormal menstruation with influencing factors like obesity and PCOS on the current subject which promotes for better reproductive health in young adolescents.

## Materials and Methods

The area selected for study was a PUC college located at Tilakwadi area, Belgaum district, Karnataka, South India. Considering being the first kind of survey on college going adolescents in the urban area of this state the only college residing in the study area has been selected for developing preliminary data on this issue. The girls were selected according to WHO criteria for the adolescence that is 10 – 19 years (World Health Organization 1984). Due approval was taken from institutional ethical committee.

**Table 1: Age of Menarche**

| 10– 12yrs | 12 – 14 yrs | 14 – 16 yrs | 16 – 18 yrs | Total |
|---|---|---|---|---|
| 16 | 110 | 79 | 4 | 209 |
| 7.6% | 52.6% | 37.7% | 1.9% | |

**Table 2: Awareness of menstrual cycle before menarche**

| Yes | No | Total |
|---|---|---|
| 104 | 105 | 209 |
| 49.7% | 50.2% | |

**Table 3: Feeling about their nature of menstrual cycle (regular/irregular)**

| Regular | Irregular | Total |
|---|---|---|
| 164 | 45 | 209 |
| 78.4% | 21.5% | |

*Sampling Methodology*

A cross sectional study was conducted among college adolescent girls of classes eleven & twelve. Random Sampling Method was adopted for selection of volunteers. Assuming the awareness on menstruation in 50-60% of urban adolescent girls (pilot studies), 209 girls were sufficient to estimate the true proportion in the study population with a 10% relative precision and 5% confidence interval. Informed consent was obtained from the study volunteers. Using the retrospective method, questionnaires were distributed and filled by volunteers.

*Data Collection*

A self-administered questionnaire designed by researcher is used for data collection. A pre-designed, pre-tested questionnaire was used for data collection. The questionnaire was pre tested on 35 students with similar qualities of the research students. All the girls were interviewed by the team comprising of investigator & trained PG Scholar. The questions was administered in English language and properly explained to avoid any form of misunderstanding and to facilitate accurate response by the subjects. The questionnaires distributed and collected immediately after completion to prevent interpersonal communication and influence of peers on individual responses amongst the girls. The questionnaire consists of demographical data of the volunteer and

**Table 4: Actual appearance of menstrual cycle**

| 28-30 days | Earlier to 21 days | Delayed after 32 days | 28-30 days& Earlier to 27 days | Earlier to 21 days & Delayed after 32 days | Total |
|---|---|---|---|---|---|
| 122 | 35 | 47 | 1 | 4 | 209 |
| 58.3% | 16.7% | 22.4 | 0.4% | 1.9% | |

**Table 5: Duration of Flow**

| 2-3 days | Less than 2 days | Greater than 4 days | Total |
|---|---|---|---|
| 102 | 0 | 107 | 209 |
| 48.8% | 0% | 51.1% | |

**Table 6: Opinion about the quantity of bleeding**

| Less | More | Normal | Less & Normal | Blank | Total |
|---|---|---|---|---|---|
| 17 | 25 | 165 | 1 | 1 | 209 |
| 8.1% | 11.9% | 78.9% | 0.4% | o.4% | |

**Table 7: No of absorbents used per day (after complete draining)**

| 1 | 2 | 3 | ½ | 2/3 | Total |
|---|---|---|---|---|---|
| 20 | 110 | 76 | 1 | 2 | 209 |
| 9.5% | 52.6% | 36.6% | 0.4% | 0.9% | |

**Table 9: Consideration of clots as normal/abnormal**

| Normal | Abnormal | Blank | Total |
|---|---|---|---|
| 149 | 46 | 14 | 209 |
| 71.2% | 22.0% | 6.6% | |

**Table 10: Menstrual Associated Abnormalities**

| | | |
|---|---|---|
| Irregular Menstural Cycle | 56 | 26.7% |
| Obesity | 21 | 10.04% |
| Facial Hair | 13 | 6.22% |
| Irregular Menstural Cycle & Obesity | 10 | 4.78% |
| Irregular Menstural Cycle & Facial Hair | 10 | 4.78% |
| Obesity & Facial Hair | 6 | 2.87 |
| Irregular Menstural Cycle ,Obesity &Facial Hair | 6 | 2.87 |

questions related to the age of menarche, type of menstrual cycle existing, menstrual irregularities and awareness on knowledge of menstruation. Awareness and knowledge on menstruation was elicited by cross questions regarding the periodicity of their cycle, duration of flow, amount of flow, no of absorbents used by them. Common menstrual irregularities were asked by using the questions about symptoms like dysmenorrheal, excess bleeding, abdominal pain, and passage of clots. Awareness on associated disturbances like obesity, appearance facial hair and PCOS has been investigated by the questions intending to know the knowledge on relation between irregular cycles and the above disturbances. The data collected by the single person (researcher).

After data collection the session had followed by educative awareness program on Irregular menstrual cycles and Polycystic Ovarian Syndrome by the researcher.

**Table 8: Menstrual problems bordering the respondents**

| Problem | Number | Percentage |
|---|---|---|
| Abdominal Discomfort | 153 | 73.2% |
| Excess Bleeding | 24 | 11.4% |
| Less Bleeding | 22 | 10.5% |
| Clots Passage | 58 | 27.7% |
| Duration > 5 days | 32 | 15.3% |
| Abdominal Discomfort & Excess Bleeding | 18 | 8.6% |
| Abdominal Discomfort less bleeding | 13 | 6.2% |
| Abdominal Discomfort & Clots Passage | 47 | 22.4% |
| Abdominal Discomfort & Duration > 5 days | 23 | 11.0% |
| Excess Bleeding & Less Bleeding | 2 | 0.9% |
| Excess Bleeding & Clots Passage | 10 | 4.7% |
| Excess bleeding & duration >5 days | 8 | 3.8% |
| Less bleeding & clots Passage | 7 | 3.3% |
| Less bleeding & duration >5 days | 2 | 0.9% |
| Clots passage & duration >5 days | 15 | 7.1% |
| Abdominal discomfort, excess bleeding, less & bleeding, clots passage duration > 5 days | 1 | 0.4% |

**Table 11: Relation between irregular menstrual cycles and obesity**

| Yes | No | Blank | Total |
|---|---|---|---|
| 100 | 102 | 7 | 209 |
| 47.84 | 48.8 | 3.34 | |

**Table 12: Relation between irregular menstrual cycles and facial hair**

| Yes | No | Blank | Total |
|---|---|---|---|
| 84 | 110 | 15 | 209 |
| 40.1 | 52.63 | 7.17 | |

**Table 13: Awareness of PCOS**

| Yes | No | Blank | Total |
|---|---|---|---|
| 83 | 124 | 2 | 209 |
| 39.7 | 59.3 | 0.95 | |

*Data Analysis*

Data thus generated was entered and analyzed by using simple percentage.

## Results

The age of female college students ranged between 16-19 yrs with mean of 17.5 yrs.

## Discussion

The mean age of respondents was 17.5 yrs. Age attaining at menarche was 13.5 yrs which was higher than what obtained in previous studies in Nagpur, Central India.[11] Awareness on menstrual cycles before menarche is seen only in 49.7%, but the girls suffering from menstrual problems were around 87% and they were not aware that these are abnormal presentation of menstruation which is due to lack of Knowledge.[12] A review carried out by Governor's Task force among boys and girls of Middlesex university, revealed that information delivered in health education classes do not include information on normal & abnormal menstrual cycles. It is also found in the study that both boys and girls are interested to know the current information so that they could make correct decisions, on when to seek the medical help.[13] A similar study in Haryana among 130 girl students, aged 13-17 years reported poor awareness regarding menstruation. This highlights the need to find out the knowledge associated with menstruation, as these have direct implications on the reproductive health of women.

The normal menstruation is understood that age of menarche < 16 years, with length of cycle 24-32 days, length of flow 3-7 days and amount of bleeding < 80ml. 78.4% of the study volunteers claims to be their cycles as regular. From the table 4 & 5 the actual occurrence of cycle with normal interval and flow is seen only in 58.3% & 48.8% which is not in consistent to above percentage.

Hence the present data emphasize the necessity of introducing the menstrual awareness in the primary education. The finding of 16% of students with length of cycle less than 21 days showed a much nearer prevalence compared with 24% of adolescent females reported having cycles shorter than 21 days in Nigeria.[9,14] The finding of 11.9% of the student having excessive or heavy menstrual flow was higher than the prevalence of 1% & 4% of women with heavy or prolonged bleeding reported in a study carried out at Osun & Gambia[14] respectively.

The mean average of number of adsorbents used by the volunteers in the study was 2.5. The females participated in the study do possess true knowledge regarding the quantity of their flow. As 78.9% of them claimed to have normal flow with the usage of pads by 2 (52.6%) or 3 (36.6%) per day which is considered to be normal.

The major menstrual disturbance in the form of abdominal discomfort was appeared in 73.2% of students. Similar type of prevalence of pain (35-78%) was reported in earlier studies carried on adolescents group. The incidence of occurrence abdominal discomfort associated with excess bleeding (8.6%) and less bleeding (6.2%) is almost similar. This reflects that abdominal discomfort is common in both the extreme quantities of bleeding. The second major complaint reported was passage of clots with 27.7%. It is also evident from the above

data that abdominal discomfort is more common in the females who menstruates the clots in their flow. This passage of clots is believed to be normal by 71.2% whereas 6.6% of students don't have knowledge.

Increased prevalence of irregular menstrual cycles associated with the obesity and facial hair is observed in the adolescents. These three features are clinical cardinal features of Polycystic Ovarian Syndrome. 2.87% of students are suffering with above three features. Among the study population 26.7% of them are suffering with irregular menstrual cycles. But the mean BMI of these participants was 18.92. Hence this reveals that irregular cycles are evident in under nourished group which is in contrary to other studies that have demonstrated the occurrence of irregular cycles only in obese. Among the adolescents with irregular cycles, 4.78 % of them are associated with obesity and facial hair. 47.84% of the students believe that there is relation between the irregular cycles and obesity. The similar awareness about the relation between irregular cycles and appearance of facial hair was observed among 40.1% of the study population. But 60% of them were not aware of Polycystic Ovarian Syndrome. This particular lack of knowledge prevents the females to visit for medical help in early stages of appearance of disease and landing in major complications like annovulatory cycles, infertility.

## Conclusion

There is general lack of awareness about knowledge on menstrual cycles in 48-50% of the adolescents. Most of them (60%) are not aware of the condition Polycystic Ovarian Syndrome though they are presenting its clinical features. There is need to educate the adolescents about the normal menstruation and the most prevalent disorder called Polycystic Ovarian Syndrome.

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