

**UNRAVELING THE BIOLOGICAL REVOLUTION: UNCOVERING MENSTRUATION
AND PUBERTY****Sri Krishnaveni Balla¹, Kavya Naga Praveena Jakka², Dipchand Shit³, Koppiseti Ishwarya Vani⁴, Keerthana Gopidalai⁵ and Dr. Pavan Kumar Yanamadala*⁶**^{1,2,3,4}Students of Pharm. D at Aditya Pharmacy College, Surampalem-533437, India.⁵Student of Pharm. D at Viswanadha Institute of Pharmaceutical Sciences College, Sontyam-531173, India.⁶Assistant Professor at Aditya Pharmacy College, Surampalem-533437, India.

Received on: 15/08/2023

Revised on: 05/09/2023

Accepted on: 25/09/2023

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Dr. Pavan Kumar**Yanamadala**Assistant Professor at Aditya
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Surampalem-533437, India.**ABSTRACT**

Menstrual health is an essential yet often neglected aspect of adolescent girls' overall well-being, particularly in rural areas with limited access to proper hygiene facilities, education, and healthcare services. This community-based survey attempts to address the various obstacles regarding menstrual health in rural regions and suggests ways to improve adolescent girls' well-being. This survey used a cross-sectional study design to assess the knowledge of menstruation and puberty in 200 girls aged 10–16 years who attained menarche. Several young adolescent girls answered the questionnaire, and their responses were recorded using a data collection form. The data collection form includes information regarding menstruation and puberty, such as initial symptoms, menstrual cycle duration, and menstrual hygiene. Approximately 16 survey questions and responses were analysed. Each accurate response received one point, while inaccurate responses received none. According to the study, only 22% of young girls were aware of the signs of puberty, whereas 78% of those who had experienced menarche were unaware of the same which may be attributed to various factors. Among the study population, 35% hold the view that healthcare professionals are the best advisors on menstruation and puberty. This research highlights the need to prioritize menstrual health among adolescent females in rural locations and this work's broader aim is to promote a healthier and more equitable future for young girls by recognizing the issues and suggesting culturally relevant solutions, ensuring that they can navigate adolescence with dignity and confidence.

KEYWORDS: Menstrual Education, Puberty Education, Adolescent Health, Menstrual Hygiene Management, Menstrual Stigma, Menstrual Myths.**INTRODUCTION**

Menstrual health is a crucial aspect of general well-being, yet it is still a problem that is often ignored and judged, especially in rural areas. Teenage girls experience enormous challenges when it comes to maintaining their menstrual health in many parts of the world, particularly in isolated rural areas. The challenges young girls face are made worse by a lack of information, basic sanitation, and period hygiene supplies.^[1]

The principal objective of this research investigation is to gain some insight into the multiple issues that adolescent girls in rural regions experience when it comes to menstruation health and to provide effective measures for advancement. This study aims to provide insights into the overall necessities of these girls by exploring the socio-cultural circumstances, financial obstacles, and infrastructure limitations that result in menstrual-related issues.

Adolescent girls come across numerous problems, which include inadequate sanitation facilities, limited access to menstrual hygiene products, and social restrictions that promote myths and prevent open conversations. These obstacles add up to a cycle of disempowerment, which impacts not only physical health but also education, self-esteem, and future possibilities.^[2,3]

The purpose of this research work is to provide advantageous perspectives in both academic and practical fields. This research focuses on beneficially affecting the lives of numerous adolescent girls who deserve better menstrual health and the opportunities that come with it through improving knowledge regarding the issues at hand as well as revealing long-term solutions.

It is to magnify the voices of these adolescent girls to acquire a greater understanding of their experiences, utilizing rigorous data collection methods such as surveys, interviews, and case studies. We hope to develop an inclusive approach that ensures the long-term viability

of the suggestions we make by including individuals from the local community, schools, healthcare professionals, and other non-profit organizations.

Ultimately, this research attempt is to improve menstruation health for adolescent girls, especially in rural areas. By breaking the silence on menstrual health and promoting supportive surroundings, we hope to bring about positive change that extends beyond physical health and onto education, gender equality, and the integrated growth of these communities. And to make it possible for young girls to pursue their studies, hopes, and ambitions without the burden of menstrual health-related difficulties by providing necessary information, and safe hygiene habits.^[4,5,6]

Improving menstrual health in adolescent females involves more than just teaching them about their periods. It involves dealing with the norms of society, promoting hygiene, and creating a space where girls can openly share their experiences.

By doing the required, we help maintain their physical health as well as their independence, self-assurance, and capacity to make wise decisions. In order to develop an effective plan to support these young girls through the most important phase of their lives, this undertaking calls for cooperation among educators, healthcare experts, governments, and communities.

It is a continuous commitment to improving the lives of the unnoticed, unheard, and undoubtedly notable voices of rural adolescent girls. We can illuminate their path to healthier, brighter futures with determination, cooperation, and deep confidence in the power of change where menstruation is not a barrier anymore but a bridge to independence.

In most developing countries, research related to menstruation and puberty isn't enough, and according to previous research or surveys, most rural teenage girls lack knowledge regarding Puberty and Menstrual Knowledge.^[7]

To clear this knowledge gap in adolescent females, we have opted to conduct the study on assessing the knowledge on Menstruation and the after-effects of Puberty in the female teenagers of Four Zilla Praja Parishad Schools around Surampalem, East Godavari District of Andhra Pradesh. Through this study, we aim to provide adequate knowledge to girls from rural areas so as to make them aware of their menstrual health, the process, the purpose, and the complications that occur during Puberty so that they may handle them efficiently.

MATERIALS AND METHODS

A quantitative cross-sectional survey design with a self-structured Questionnaire form was used to conduct this study to determine the knowledge of menstrual hygiene of young adolescent girls who were in the age group of

10-16 years from Zilla Praja Parishad High Schools at rural communities of Surampalem, Vadisaleru, and Rangampeta of East Godavari District in Andhra Pradesh. Convenience Sampling has been used to conduct this study.

Consent was taken from every Participant who participated in the study. Adolescent girls in the age group of 10-16 years who attained their menarche were included in the study and the subjects who neither refused to take part in the study nor felt too shy to answer a few of the Questions even after briefing the purpose of the study were excluded.

Slovin's formula has been used to calculate the sample size of the Study using the formula of $n = N / (1 + N(e)^2)$. Going with the formula, n is the Sample Size, N is the Population Size, and e is the Margin of Error. By using the above formula with the Population Size of 300, and the margin of error as 0.05, the sample size computed is 200. The project took 4 months to complete and the data was analysed using SPSS Version 21.0.

A Self-structured Questionnaire form was prepared consisting of 17 questions, and the scoring is like score 1 for each correct answer and Score 0 for Incorrect selection of the answer. Total scores greater than 15 (>85%) will be termed as having Excellent Knowledge, 12 to 14 (70-83%) termed as having good knowledge, and scores of 9-11 (53%-65%) fall in the category of having average knowledge and scores of less than 9 (<52%) were said to be having Poor knowledge regarding the Puberty and Menstruation.

The participants were briefed about the purpose of the study and also ensured anonymity regarding their participation in the study. Questions were explained to the participants clearly and were asked to give the responses to the Questions. Personal information such as name, address, and phone number was not taken from the participants and confidentiality was ensured. Informed Consent was signed by all the participants and no one was forced to participate in the study. Before the initiation of the study, Correct and proper information was obtained from the Community People and the School Management regarding the purpose of the study. Ethical consideration was followed while performing the research work.

RESULTS AND DISCUSSION

Our study aims to assess the knowledge of Adolescent girls in the rural settings of East Godavari District, Andhra Pradesh. Every participant (100%) has attained menarche at the time of providing the response ($n=200$). Coming to the Question on the first sign of Puberty, 43 participants (21.5%) gave the correct answer about Breast Development, and the remaining 157 participants (78.5%) having poor knowledge regarding this, gave a different answer, which can be termed wrong.

Table 1: Demographics of Study Population.

Variable	Category	Frequency (n=200)
Age	10-16 years	200 (100%)
Mother's level of education	Illiterate	11 (5.5%)
	Schooling	92 (46%)
	Intermediate	94 (47%)
	Graduate	3 (1.5%)
	Postgraduate	0
Father's level of education	Illiterate	25 (12.5%)
	Schooling	93 (46.5%)
	Intermediate	70 (35%)
	Graduate	10 (5%)
	Postgraduate	2 (1%)

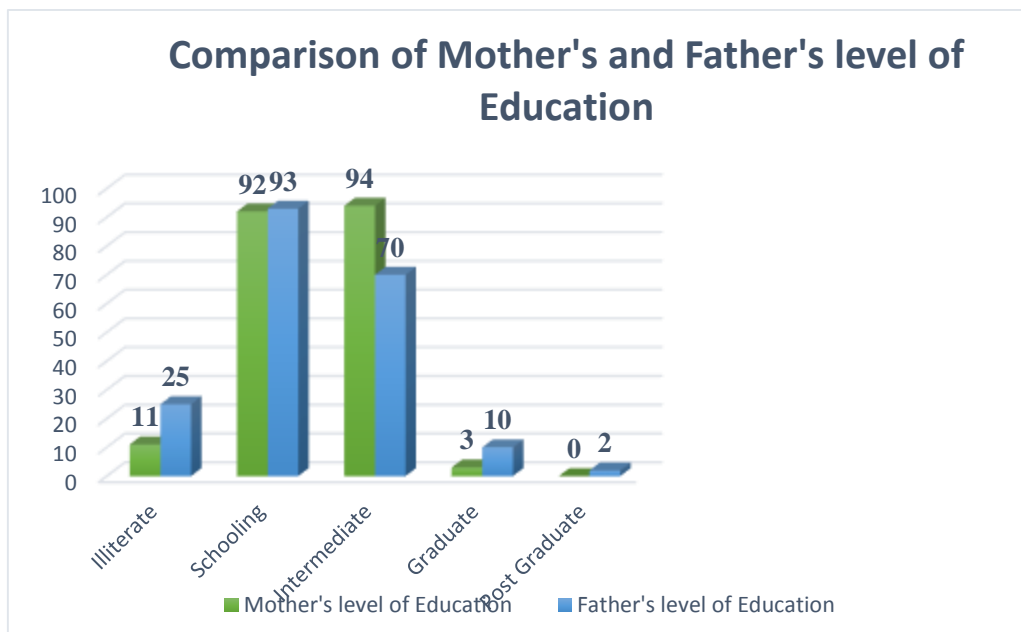


Figure 1: Comparison of Mother's and Father's Level of Education.

Our study results show that 44.5% of the participants are aware of the fact of changing 3-6 sanitary pads on a daily basis during Menstruation and 55.5% of the Participants don't have a piece of proper knowledge of the number of pads they need to change on a daily basis. It has also been found that most of the Young girls are using cloths rather

than Pads during their stay at home in the Periods. This demonstrates how mothers' lack of understanding, embarrassment, and misconceptions about their daughter's periods contribute to poor menstrual hygiene, which can result in a variety of additional problems with the female reproductive system.

Table 2: Questionnaire for assessing the Knowledge of Puberty and Menstruation.

Question	Responses	Frequency (n=200)
Are you menstruating now? (Have you attained Menarche)	Yes No	200 (100%) 0
Where have you got the First Source of Information regarding Puberty and Menstruation?	Parents Others	182 (91%) 18 (9%)
Are you familiar with puberty?	Yes No	121 (60.5%) 79 (39.5%)
Who, in your opinion, ought to be the best resource for data on puberty?	Healthcare Providers Others (Parents mostly)	70 (35%) 130 (65%)
What circumstances are ideal when discussing menarche and puberty?	With Females only With Others	196 (98%) 4 (2%)
What is the first sign of female puberty?	Development of Breast	43 (21.5%)

	Others	157 (78.5%)
What is the typical age of girls' puberty?	10 years to 16 years Others	102 (51%) 98 (49%)
Does the pituitary gland release the hormone that triggers puberty?	Yes Don't know exactly	54 (27%) 146 (73%)
When a female reaches puberty, she transitions from being a child to?	Adult Other Names	89 (44.5%) 111 (55.5%)
What is the name of the first Menstrual period?	Menarche Other Names	84 (42%) 116 (58%)
Do you consider yourself to be an expert in the knowledge of menarche?	Yes Others	87 (43.5%) 113 (56.5%)
How much time passes typically between the start of puberty and menstruation?	2 to 3 years Others	75 (37.5%) 125 (62.5%)
How many days pass between the first day of menstruation and the first day of the following period?	20 to 40 days Others	121 (60.5%) 79 (39.5%)
What is accurate regarding the typical duration of menstrual bleeding?	3 to 8 Days Others	107 (53.5%) 93 (46.5%)
What is the typical number of daily pad changes during menstrual periods?	3 to 6 Pads a day Less than 3 Pads per day	89 (44.5%) 111 (55.5%)
Which regarding uncomfortable menstruation is accurate?	Dysmenorrhea Other Irrelevant Term	32 (16%) 168 (84%)
Do you typically have symptoms in the days leading up to or following your period?	Yes No	135 (67.5%) 65 (32.5%)

In this study, the percentage of young adolescent females who are aware that the Pituitary gland releases the hormone that signals the start of Puberty is 27%.

According to the findings of this study, 1% of the participants have a great understanding of menstrual information, 8% have good knowledge, 24% have average knowledge, and the rest 67% of girls have inadequate awareness of menstruation and puberty.

Table 3: Level of Knowledge on Menstruation and Puberty among the Study Population.

Level of Knowledge	Frequency (n = 200)
Excellent (Scores of >15)	2 (1%)
Good (Scores between 12-14)	16 (8%)
Average (Scores between 9-11)	49 (24.5%)
Poor (Scores less than 9)	133 (66.5%)

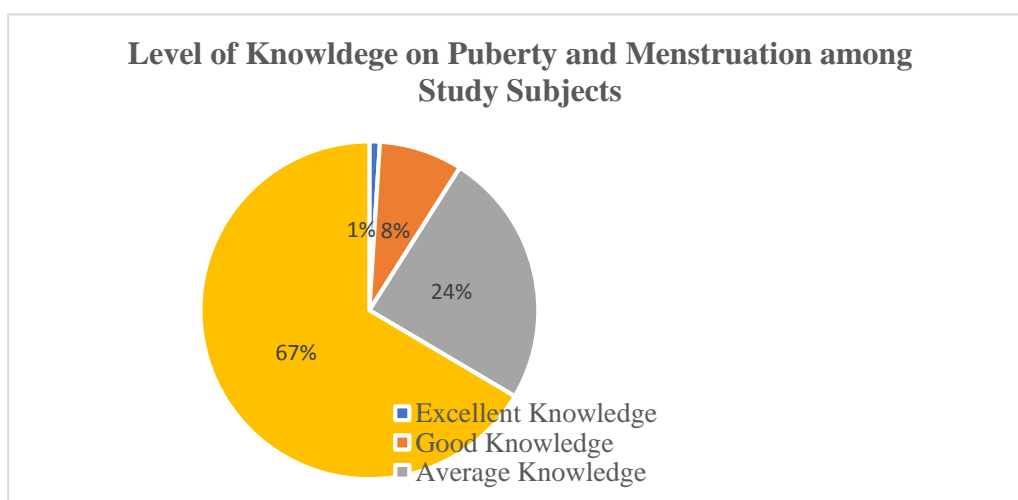


Figure 2: Level of Knowledge on Menstruation and Puberty among the Study Population.

These results demonstrate the necessity of educating girls and their mothers about the correct understanding of menstruation and puberty and the establishment of a

school-based reproductive health program in order to equip the girls with the necessary tools to deal with this pressing issue.

CONCLUSION

Most of the young adolescent girls in this study had limited awareness of menstruation and puberty. Many of the early teenage females' assumptions could have resulted in significant health problems. This demonstrates the need for community health programs to inform mothers of accurate information because mothers are the first source of information or play a key role for their daughters. Awareness programs should also be organized to improve the knowledge of young adolescent girls in communities.

Teenagers' Textbooks of Science should include information on reproductive health so that young girls can go through puberty and menstruation safely. Unfortunately, menstrual and puberty-related information is only shared when young adolescent girls get their first period, which leads to the majority of girls starting their menstrual cycles unenlightened and unready.

Girls require more than just access to inexpensive, safe menstruation products, cleanliness, and waste disposal facilities to achieve pleasant menstrual experiences and optimal menstrual health. Additionally, they need referrals, access to quality medical treatments, accurate and timely information on menstruation from knowledgeable specialists, and supportive societal norms.

Healthcare providers should provide education to females at the community level to enhance the knowledge of young adolescent girls. Educational institutions should also play a key role in providing knowledge to girls regarding puberty and menstruation, and should also organize seminars or Webinars by Proficient Physicians for their students to provide adequate knowledge about menstruation hygiene and puberty. There is also a need to dispense sanitary pads free of cost to adolescent girls. Our study's limitation is, that it is a cross-sectional study, and also had time limitations to it.

CONFLICT OF INTEREST

The authors declares no conflicts of interest.

ACKNOWLEDGMENTS

The authors sincerely convey their gratitude towards their Principal Dr. D. Sathis Kumar whose scholarly advice, and constant encouragement have contributed significantly to the completion of the study.

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