



## ORIGINAL RESEARCH ARTICLE

pISSN 0976 3325 | eISSN 2229 6816

Open Access Article

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# A Comparative Study of Knowledge Regarding Reproductive Health among Rural & Urban Adolescent Girls in District Bareilly

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**Financial Support:** None declared

**Conflict of Interest:** None declared

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### How to cite this article:

Kumar P, Saxena S, Gupta SB, Agarwal N, Imtiaz D. A Comparative Study of Knowledge Regarding Reproductive Health Among Rural & Urban Adolescent Girls in District Bareilly. Natl J Community Med 2019; 10(4):212-217

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**Date of Submission:** 08-01-19

**Date of Acceptance:** 25-02-19

**Date of Publication:** 30-04-19

## INTRODUCTION

World health organization has defined 'Adolescence' as the period between 10-19 years of life.<sup>1</sup> Worldwide 1/5<sup>th</sup> of the total female population is contributed by adolescent girls and in India adolescent girls account for a little more than one-fifth of the population (21.4%).<sup>2</sup> Current population of India is 1.21 billion and among those people 253.2 million of population lies between 10 - 19 years.<sup>3</sup>

Adolescents constitute perhaps the healthiest group in the population, having the lowest mortality and morbidity when compared with other population age groups. However, the period of adolescence, beginning with the onset of puberty, is a crucial transition into adulthood. Reproductive

## ABSTRACT

**Introduction:** Adolescents constitute perhaps the healthiest group in the population, having the lowest mortality and morbidity when compared with other population age groups. Reproductive health covers all aspects of adolescent health. In order to lead healthy, responsible & fulfilling lives & protect themselves from reproductive health problems youngsters need to be knowledgeable about themselves & need adequate information about the physical & psychological changes that take place during puberty, menstruation, pregnancy & child birth.

**Material & Methods:** The present cross sectional study was conducted among the adolescent girls registered at government and private schools in the areas served by department of Community Medicine, SRMSIMS, Bareilly. 210 adolescent girls each were surveyed from schools in both rural as well as urban area making a total sample size of 420.

**Result:** Nearly three fourth of urban girls 156 (74.3%) and two-third 139 (66.2%) of rural girls knew that menstruation is a normal physiological process. More urban girls 88 (41.9%) than rural 51(24.3%) were aware of uterus being the source of menstrual bleeding.

**Conclusion:** While assessing the knowledge of adolescent girls regarding reproductive health, it was seen that urban girls have better knowledge as compared to rural girls.

**Keywords:** Adolescent girls, Knowledge, Reproductive Health

health covers all aspects of adolescent health. It is an umbrella concept, consisting of several distinct, yet related issues such as abortion, child birth, sexuality, contraception and maternal mortality. Biological, social, cultural, economical and behavioural factors play an important role in determination of reproductive health.<sup>4</sup>

Because of the young age structure of India's population; the reproductive attitude and behaviour of teenagers are likely to have an important impact on overall reproductive health, demographic and social outcome. Adolescent sex and exposure to the risk of pregnancy has attracted considerable research attention to understand its magnitude and address it as a problem.<sup>5</sup> Adolescent girls with inadequate knowledge

of personal care and family planning practices enter the reproductive phase of life, thus perpetuating the problems of malnutrition and poverty to the coming generation. Awareness plays a pivotal role in motivating girls to have a favourable attitude towards family planning and to adopt health family planning behaviour in her womanhood.<sup>6</sup>

In order to lead healthy, responsible & fulfilling lives & protect themselves from reproductive health problems youngsters need to be knowledgeable about themselves & need adequate information about the physical & psychological changes that take place during puberty, menstruation, pregnancy & child birth. The need to address these problems through reproductive health education has been recognized at various national & international forums. Among the several options available, creating awareness among adolescents appears to be an important tool.<sup>7</sup> The changing moral & social values and shift in the standard of societal behaviour from conservatism to liberal interaction between both sexes is attributed largely to exposure to the media especially television and movies. Adolescents find themselves sandwiched between a glamorous western influence and a stern conservatism at home, which strictly forbids discussion on sex. This dichotomy aggravates the confusion among adolescents.<sup>8</sup> Younger generations are tomorrow's parents. The reproductive health decisions that they make today will affect the health and wellbeing of their upcoming generations and their community. Health knowledge is considered as one of the key factors that enable adolescents to be aware of their rights and health status in order to seek appropriate health services. It is very important to study the overall knowledge and to know the differences between rural and urban adolescent girls focus on reproductive health issues. Thus this study was planned to assess the knowledge regarding reproductive health among urban & rural adolescent girls in district Bareilly.

## MATERIAL & METHODS

The present cross sectional study was conducted among the adolescent girls registered at government and private schools in the areas served by the Urban Health Training Centre (UHTC), Rampur Garden, Bareilly and the Rural Health Training Centre (RHTC), Dhaura-Tanda, under the head of Shri Ram MurtiSamarak Institute of Medical Science (SRMSIMS) Bareilly.

Adolescent girls aged 10-19 years, attending 6<sup>th</sup> to 10<sup>th</sup> class, in the selected government and private schools willing to participate were included in the study. Adolescent girls those who were not present

in school for maximum of three consecutive visits were excluded from the study.

**Sample size estimation:** Menstruation being the most common aspect of reproductive health was taken as the basis for calculating the sample size. The prevalence of awareness regarding the onset of menstruation prior to attainment of menarche among school going adolescent girls was found to be 67% in a study conducted by Dasgupta A and Sarkar M.<sup>9</sup> Based on these figures, a sample size of 210 was calculated taking allowable error as 10% of prevalence and applying the standard formula sample size ( $n$ )= $1.96^2 PQ / L^2$  where P is prevalence (67%), Q is 100-P and L is relative error (10% of P). The calculated sample size was 190 and considering another 10% of sample size to be non-response rate, the sample size came out as 209 which were rounded-off to 210.

**Sample size:** 210 adolescent girls each were surveyed from schools in both rural as well as urban area making a total **sample size of 420**.

**Ethical approval:** The study was approved by the Institutional Ethics Committee.

**Study Tool:** After explaining the purpose of the study and obtaining oral consent, the study was conducted using predesigned semi-structured questionnaire including brief socio-demographic information and knowledge about reproductive health.

**Procedure for selection of schools in urban & rural area:** Separate enlisting of all government and private schools in urban & rural area was done. Two government school and two private schools were selected by simple random sampling from the separate lists of school in urban & rural area.

**Selection of study subjects in schools:** First of all, permission was sought from the principal of the selected schools in urban and rural area and then from each school, a complete roll number list of all students studying in classes 6th to 10th was obtained and 21 girls meeting the inclusion criteria and not falling in exclusion criteria was selected using simple random sampling and surveyed from each class.

**Methodology of Data Collection:** Visits were made to the schools and information about the purpose of study was given to all study subjects, rapport was developed and voluntary informed consent was taken before filling the pre-designed, pre-tested semi-structured questionnaire. The methodology comprised of face-to-face interview by female investigator with school going adolescent girls in the school premises at a private place provided by the school management. After obtaining the permission from principal, a complete roll

number list of all students studying in classes 6<sup>th</sup> to 10<sup>th</sup> was obtained and 21 girls meeting the inclusion criteria and not falling in exclusion criteria was selected using simple random sampling and surveyed from each class. Any girl found absent for three subsequent visits was replaced by one of the remaining girls in the respective class till the requisite number of girls from each class was selected. In the end, after the interview, the girls were given health education and counselled in areas where their knowledge was lacking and needed reinforcement.

**Statistical Analysis:** Data were entered using Microsoft Excel 2010 and statistical analysis was done using IBM SPSS v 20.0.0. Categorical variables were analysed using proportions and percentages. Association between categorical variables was established by Chi square test. Z test was used for testing of proportion.

## RESULT

Majority of the girls i.e. 214 (50.9%) were in mid adolescence (14-16 years) & nearly three-fourth of study participants 313(74.5%) belonged to nuclear family. Predominantly 168 (40.0%) subject's father had completed their high school education and 201(47.8%) father was skilled worker by occupation. While 149 (35.5%) of sample's mother had completed their primary education and majority of rural mother 307 (73.1%) were housewives. Mostly 157(37.4%) subjects belonged to middle class socio-economic status (**Table 1**)

Out of 420 adolescent girls who participated in the study, 364(86.7%) had attained menarche. On assessing for knowledge on the process of menstruation, nearly three fourth of urban girls 156 (74.3%) knew that menstruation is a normal physiological process, more urban girls 88 (41.9%) were aware of uterus being the source of menstrual bleeding, 195(92.8%) urban girls were aware of the average length of the menstrual cycle i.e. 3-5 days compare to the rural adolescents. More than half girls knew the importance of cleanliness during menstruation in both urban & rural area.

About 230 (54.7%) adolescents were found to be aware of teenage pregnancy, 108(87.8%) urban girls knew the normal age for child bearing i.e.>20 years, 192(91.4%) of urban adolescent girls knew about the legal age of marriage for girls than rural girls. Majority of girls knew the small family norms & importance of regular ANC check-up is essential during pregnancy. (**Table 2**)

Out of 420 study subjects, 347(82.6%) of the subjects were found to be aware of oral contraceptive pill (OCP) followed by 254 (60.5%) about IUCD&

237 (56.4%) about condom. Only 39 (9.3%) adolescent girls were aware about depot injection. (**Table 3**)

Nearly half of urban subjects were found to be aware of sex education as compared to lesser proportions of rural girls 72(34.3%). While assessing the attitude towards sex education more than two-third of urban adolescent girls i.e. 141(67.1%) felt the need for sex education. Overall, more than half of study subjects 224(53.3%) stated the appropriate age for getting sex education to be greater than 16 years. Majority 409(97.4%) girls stated female to be an effective medium for sex education and 297(70.7%) adolescents wanted sex education to be included in curriculum. (**Table 4**)

Nearly half of study participants 208(49.5) cited ASHA/Local health worker to be the primary source of information regarding availability of reproductive health services in their area. (**Table 5**)

**Table 1: Biosocial characteristics of Adolescent Girls (n=420)**

Variables	Rural (n=210)	Urban (n=210)	Total (n=420)
<b>Age (in years)</b>			
10-13	74(35.2)	81(38.6)	155(36.9)
14-16	101(48.1)	113(53.8)	214(50.9)
17-19	35(16.7)	16(7.6)	51(12.1)
<b>Type of Family</b>			
Nuclear	141(67.1)	172(81.9)	313(74.5)
Joint	69(32.8)	38(18.1)	107(25.5)
<b>Father's Education</b>			
Illiterate	52(24.7)	19(9.0)	71(16.9)
Primary	73(34.7)	79(37.6)	152(36.2)
High school	77(36.7)	91(43.4)	168(40.0)
Intermediate& above	8(3.8)	21(5.0)	29(6.9)
<b>Mother's Education</b>			
Illiterate	74(32.4)	26(12.4)	100(23.8)
Primary	68(32.4)	81(38.6)	149(35.5)
High school	55(26.2)	83(39.5)	138(32.8)
Intermediate& above	13(6.2)	20(9.5)	33(7.8)
<b>Father's Occupation</b>			
Unskilled worker	09(4.3)	03(1.4)	12(2.8)
Skilled worker	114(54.3)	87(41.4)	201(47.8)
Clerical/Shop owner	73(34.7)	48(22.8)	121(28.8)
Semiprofessional	11(5.2)	37(17.6)	48(11.4)
Professional	03(1.4)	35(16.7)	38(9.0)
<b>Mother's Occupation</b>			
Housewife	172(81.9)	135(64.3)	307(73.1)
Working	38(18.1)	75(35.7)	113(26.9)
<b>Socio-economic status (Mod BG Prasad Classification)</b>			
Upper	07(3.4)	28(13.3)	35(8.3)
Upper Middle	23(10.9)	58(27.6)	81(19.3)
Middle	71(33.8)	86(40.9)	157(37.4)
Upper Lower	61(29.0)	26(12.4)	87(20.7)
Lower	48(22.8)	12(5.7)	60(14.3)

**Table 2: Knowledge about Menstruation & Pregnancy among study subjects**

	Rural (n=210) (%)	Urban (n=210) (%)	Total (n=420) (%)	$\chi^2$	p value
<b>Attained Menarche</b>					
Yes	188(89.5)	176(83.8)	364(86.7)		
No	22(10.5)	34(16.2)	56(13.3)		
<b>Understanding of Menstruation</b>					
Yes (Normal Physiological Process)	139(66.2)	156(74.3)	295(70.2)	3.292	0.06
No	71(33.8)	54(24.2)	125(29.8)		
<b>Source of Menstrual Bleeding</b>					
Yes (Uterus)	51(24.3)	88(41.9)	139(33.1)	14.72	0.00
No	159(75.7)	122(29.0)	281(66.9)		
<b>Average Length of cycle</b>					
Yes (3-5 Days)	187(89.0)	195(92.8)	382(90.9)	1.85	0.17
No	23(10.9)	15(7.14)	38(9.0)		
<b>Important to maintain cleanliness during menstruation</b>					
Yes	127(60.5)	145(69.1)	272(64.7)	3.38	0.065
No	83(39.5)	65(30.9)	148(35.2)		
<b>Awareness regarding teenage pregnancy</b>					
Yes	107(50.9)	123(58.6)	230(54.7)	2.46	0.11
No	103(49.0)	87(41.4)	190(45.2)		
<b>Normal age for child bearing</b>					
>20 years	87(81.3)	108(87.8)	195(84.8)	1.872	0.17
<20 years	20(18.7)	15(12.2)	35(15.2)		
<b>Legal age of marriage for girls (in years)</b>					
>18	176(83.8)	192(91.4)	368(87.6)	5.619	0.01
<18	34(16.2)	18(8.6)	52(12.4)		
<b>Small family norms</b>					
Correct (Two child)	186(88.6)	197(93.8)	383(91.2)	3.58	0.05
Incorrect	24(11.4)	13(6.1)	37(8.8)		
<b>Regular ANC check-up is essential during pregnancy</b>					
Yes	205(97.6)	195(92.8)	400(95.23)	5.25	0.02
No	5(2.38)	15(7.14)	20(4.76)		

**Table 3: Knowledge about contraception among adolescent girls**

Contraception	Rural (n=210) (%)	Urban (n=210) (%)	Total (n=420) (%)	Z test	p value
Condom	113(53.8)	124(59.0)	237(56.4)	1.08	0.27
OCP	163(77.6)	184(87.6)	347(82.6)	2.70	0.006
IUCD	98(46.6)	156(74.3)	254(60.5)	5.78	0.000
Depot Injection	11(5.2)	28(13.4)	39(9.3)	2.8	0.004
Female Sterilization	33(15.7)	89(42.4)	122(29.0)	6.019	0.000
Male Sterilization	13(6.2)	57(27.1)	70(16.7)	7.43	0.000

\*Multiple Responses

**Table 4: Attitude regarding sex education among study subjects**

Response	Rural (n=210) (%)	Urban (n=210) (%)	Total (n=420) (%)	$\chi^2$	p value
<b>Knowledge regarding Sex Education</b>					
Yes	72(34.3)	104(49.5)	176(41.9)	10.01	0.001
No	138(65.7)	106(50.5)	244(58.1)		
<b>Sex education is necessary</b>					
Yes	112(53.3)	141(67.1)	253(60.3)	8.36	0.0038
No	98(46.7)	69(32.8)	167(39.7)		
<b>Appropriate age for providing sex education (in years)</b>					
<16	94(44.7)	102(48.5)	196(46.7)	0.612	0.434
>16	116(55.3)	108(51.5)	224(53.3)		
<b>Effective medium for sex education</b>					
Male	3(1.4)	8(3.8)	11(2.6)	2.33	0.126
Female	207(86.7)	202(96.2)	409(97.4)		
<b>Wanted sex education to be included in the curriculum</b>					
Yes	134(63.8)	163(77.6)	297(70.7)	9.66	0.0018
No	76(36.2)	47(22.4)	123(29.3)		

**Table 5: Source of information regarding availability of Reproductive Health services**

	Rural (n=210) (%)	Urban (n=210) (%)	Total (n=420) (%)	Z test	p value
ASHA/Local health worker	95(45.2)	113(53.8)	208(49.5)	1.75	0.07
Relatives	24(11.4)	39(18.6)	63(15.0)	2.04	0.04
Friends	36(17.1)	46(21.9)	82(39.0)	1.23	0.21
Local Leaders	15(7.1)	23(10.9)	38(9.0)	1.36	0.17
Teachers	27(12.8)	36(17.1)	63(15.0)	1.22	0.21
Print media	19(9.0)	31(14.7)	50(11.9)	1.80	0.07
Family members	20(9.5)	28(13.4)	48(11.4)	1.22	0.21
Others	12(5.7)	18(8.6)	30(7.1)	1.13	0.25

\*Multiple Responses

## DISCUSSION

**Bio-Social characteristics of school going adolescents:** The socio-demographic characteristics of present study was similar to the findings of Tegegne T K, Sisay MM. (2014) where in their study they found that out of 574 adolescents, who participated, most of them were in mid adolescence & mean age of study subjects was 14.96 ( $\pm 1.33$ ) years. Mothers of most school girls were illiterate, 244 (42.51%) and were not gainfully employed (housewives), 361 (62.89%) and a third of their fathers can only read and write, 210 (36.59%) and most were farmers, 381 (66.38%).<sup>10</sup> On the contrary to this Bhudhagaonkar J, Shinde M.(2014) in their study found that majority of the adolescent girls i.e. 48% were in the age group of 15 years, 59%adolescents belong to nuclear family, 83% girls were from Hindu religion. Majority of the girl's father i.e. 43% had completed their secondary education. Majority of the adolescent girl's mother i.e. 37 % had completed their primary education. Majority of the samples i.e. 59% belonged to an income group between Rs. 2000 to 5000.<sup>11</sup>

**Knowledge about menstruation & pregnancy among study subjects:** In the present study while assessing the knowledge regarding menstruation most of urban girls have adequate knowledge as compare to the rural girls. Similar findings were reported by Kamath R , Ghosh D, Lena A , Chandrasekaran V.(2013)<sup>12</sup>On the contrary, Juyal et al (2012) in her study found that only 29.1% of the respondents were having knowledge about the reproductive system as the source of bleeding while 21.9% of the students thought urinary system as the source.<sup>13</sup> While assessing the importance of cleanliness during menstruation,Sabdoka D et al<sup>14</sup>reported that majority of the respondents (62.3%) did not believe that maintaining personal hygiene is related to menstrual problems.

In the present study both rural & urban adolescent girls more than half knew the norms of marriage. Similar result was reported by Bano M et al (2012)where author found that most of the girls were aware of the legal age of marriage in a girls and maximum (61.8%) girls were aware about the

preferable age at first pregnancy to be >20 years while 38.1% girls were not aware about it.<sup>6</sup>Study done by Kotwal N et al (2008) on Awareness of Reproductive Health among Rural Adolescent Girl reported that majority of school dropout girls (80%) knew the meaning of pregnancy. Majority of an equal Percentage of school dropout girls (60%) and school going (60%) had knowledge about right age of child bearing.<sup>15</sup>Similar findings were reported by Majumdar R et al (2000) <sup>16</sup> and Benjamin AI et al (2001).<sup>5</sup>

**Knowledge about contraception among adolescent girls:** In the present study majority of adolescent girls were aware about oral contraceptive pills as compare to other family planning methods. Whereas Renjen P et al (2010) reported that 98% (153/156) of the students had knowledge about family planning and 86% (134/156) of them had heard about contraceptives. Most of them knew about condoms (85%) and contraceptive pills (40%) but knowledge about permanent methods and Cu-T was poor (average 12%).<sup>17</sup> Similar finding were reported by Jain M et al (2013)<sup>18</sup>&Bano M et al (2012).<sup>6</sup>

**Attitude regarding sex education among study subjects:** Mostly urban girls felt need of sex education in the present study whereas Shah C et al (2011) in their study reported that only 65.4% were interested in gaining further knowledge while remaining had the belief that this type of education will increase adverse sexual practice.<sup>19</sup>On the contrary to the study of Agarwal.A.K, Kumar.R. (1996) where appropriate age for sex education was <16 years as revealed by more than half study subjects (52.8%). Most of the girls (90.4%) wanted sex education to be included in school curriculum.<sup>20</sup>

**Source of information regarding availability of reproductive health services:** Majority reported ASHA/Local health workers were the main source of information regarding reproductive health services in the present study.Similar findings were reported by Abajobiri A A, Seme A. (2013) where 144(38.3%) of the adolescents have ever heard of RH services and reported health professionals 116

(80.4%) as the main sources of information followed by radio 22 (15.5%), television 4 (3.1%) and print media (posters/leaflets) 2 (1%).<sup>21</sup>

## CONCLUSION

While assessing the knowledge & attitude of adolescent girls regarding reproductive health, it was seen that urban girls are more aware than rural girls. Mostly girls knew about spacing methods of contraception. The gap in the knowledge & attitude may be due to external environment like exposure to media, family status & atmosphere of schools. But still, there is need for sensitizing the adolescent girls and increasing their knowledge towards reproductive health in both rural & urban area.

## RECOMMENDATION

Reproductive health education by health professionals can improve the knowledge and perceptions of adolescent girls. A comprehensive adolescent reproductive health program can provide right information at right age. School teachers are the right source for improving the knowledge about reproductive health at beginning. Teachers' orientation to "adolescent health care" will definitely change the gap of knowledge among adolescent girls.

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