



Original Research Article

A Study of Awareness of Reproductive Health and Sexually Transmitted Diseases among Adolescent Girls of Rural Areas and Urban Slums in Bellary Taluk

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ABSTRACT

Background: In India, adolescent girls (10-19 years) account for a little more than one fifth of the population (21.4%). Due of various social taboos, ignorance and misconceptions about sex and sexuality, conception and contraception; adolescents form a special vulnerable group which needs nutritional, social, psychological and emotional support.

Objectives: To assess the awareness levels of adolescent girls regarding reproductive health and sexually transmitted diseases and to compare the awareness levels between rural and urban slum adolescent girls.

Methodology: A descriptive community based cross sectional study was conducted in a setting of urban slums of Bellary city and rural areas of four primary health centres attached to our medical college, Karnataka state, India, during the period of July 2010 to February 2011. A total of four urban slums were included in the study. Within each selected urban slum 100 adolescent girls were studied. In rural area, four PHCs attached to our college were selected. Within each PHC, four subcentres were selected randomly and in each selected subcentre 25 adolescent girls were selected using systemic random sampling. Altogether in each PHC 100 adolescent girls were studied. Information was collected using face to face interviews based on a structured, pre-tested questionnaire.

Results: The overall awareness with respect to menstruation, pregnancy and contraception and symptoms of STDs like white discharge and its causes was low where in more than half of both urban and rural students were not aware about the reproductive health issues. There was a statistically significant difference in the awareness levels between urban and rural adolescent girls with respect to knowledge about menstruation before attaining it, knowledge about legal age of marriage for females and contraception, knowledge about white discharge and its causes.

Key words: Awareness, adolescent girls, rural, urban slums, Reproductive health.

INTRODUCTION

Adolescence is a transition phase through which a child becomes an adult. It is characterized by rapid growth and development, physiologically, psychologically and socially. [1] Thus it is a time of psychosomatic and sociological adjustment, a situation of being no longer a child, but not yet an adult either. [2]

Most adolescents go through adolescence with little or no knowledge of the body's impending physical and physiological changes, health issues and problems. Early marriages, high fertility rates, high rates of teenage pregnancy, high risk of STI/RTI and poor nutritional status are the main health problems specially related to the adolescent girls of India. [3]

In India, adolescent girls (10-19 years) account for a little more than one fifth of the population (21.4%). Out of an estimated 200 million adolescents, girls account for slightly less than 100 million due to disproportionate sex ratio. [4] Due of various social taboos, ignorance and misconceptions about sex and sexuality, conception and contraception; adolescents form a special vulnerable group which needs nutritional, social, psychological and emotional support. [5]

As we enter the new millennium, the concept of health for all has remained a distant dream, especially for adolescent girls who had always been unreached group of our society. [6] The importance of this target group lies in the fact that they are going to be mothers of tomorrow whose well-being is critically important for improving the nutritional, health and educational status of children in the state. Empowerment of the adolescent girl is necessary to help her cope with the changes and promote awareness of health, hygiene and nutrition so as to break the intergenerational life cycle of nutritional and gender disadvantage and provide an

enabling and supporting environment for self-development. [7]

Objectives:

1. To assess the awareness levels of adolescent girls regarding reproductive health and sexually transmitted diseases.
2. To compare the awareness levels between adolescent girls of rural areas and urban slums.

MATERIALS AND METHODS

Study Design and Study Setting:

A descriptive community based cross sectional study was conducted in a setting of urban slums of Bellary city and rural areas of four primary health centres attached to our medical college, Karnataka state, India, during the period of July 2010 to February 2011.

Sample size and sampling:

The estimated prevalence of anaemia among adolescent girls as per National Family Health Survey-3 [8] data is 56%. Considering this, by using formula $n=4pq/d^2$ sample size for our study was estimated, and allowable error 10%, the estimated sample size was 314 and it was rounded off to 400. The study was done in the setting of urban slums of Bellary city where in first we divided the Bellary city geographically into four quadrants. Within each geographically divided quadrant one slum was selected randomly. A total of four urban slums were included in the study. Within each selected urban slum 100 adolescent girls were studied. In rural area, four PHCs attached to our college were selected. Within each PHC, four subcentres were selected randomly and in each selected subcentre 25 adolescent girls were selected using systemic random sampling. Altogether in each PHC 100 adolescent girls were studied.

Method of data collection:

Information was collected using face to face interviews based on a structured, pre-tested questionnaire. Pre testing was done on adolescent falling in the same age group (10-19 years), in a similar setting, to screen for potential problems in the questionnaire. The interviewers discussed the questionnaire thoroughly among themselves before data collection to decrease interviewer bias. With the exception of a few open ended questions, the interview was based on prompted questions.

Inclusion and exclusion criteria:

All the adolescent girls in the age group of 10-19 years who were residing in the study area for a minimum period of 6 months and willing to give their consent were included in the study.

Adolescent girls who were terminally ill and pregnant were excluded from the study.

A total of 441 students were approached for participation in our survey, 41 (9.2%) declined to participate in the study.

Questionnaire and study variables:

The questionnaire had three parts, where in the first part was structured to elicit the socio-demographic profile of the adolescents. The second part of the questionnaire consisted of questions structured to elicit awareness about reproductive health which included about menstruation, pregnancy and contraception. The third part of the questionnaire consisted of questions structured to elicit awareness about sexually transmitted diseases.

Socioeconomic status (SES) was estimated according to modified B.G. Prasad classification. Statistical analysis: Data were entered into an electronic database and analysis was done to ascertain the prevalence of anaemia and determinants of anaemia among the adolescent girls using SPSS version 16.0.1 (SPSS, 2007).

Ethical considerations: The study was given ethical approval by Ethical Review Committee of Vijayanagara Institute of Medical Sciences. All ethical requirements including confidentiality of responses and informed consent were stringently ensured throughout the project.

RESULTS AND OBSERVATIONS

Table no. 01A

Socio-demographic profile of adolescent girls		
Variables	Rural n (%)	Urban slum n (%)
Age in years		
10 - 12 yrs	16 (4.0)	43 (10.7)
12 - 14 yrs	143 (35.7)	132 (33.0)
14 - 16 yrs	181 (45.2)	117 (29.3)
16 - 18 yrs	50 (12.5)	91 (22.7)
18 - 19 yrs	10 (2.5)	17 (4.2)
Religion		
Hindu	320 (80.0)	309 (77.2)
Muslim	45 (11.3)	39 (9.7)
Christian	35 (8.7)	49 (12.3)
Others	0 (0.0)	3 (0.7)
Socio-economic status		
Upper class	2 (0.5)	32 (8.0)
Upper middle class	16 (4.0)	106 (26.5)
Lower middle class	70 (17.5)	115 (28.7)
Upper lower class	169 (42.3)	110 (27.5)
Lower class	143 (35.7)	37 (9.3)
Marital status of the girl		
Married	31 (7.8)	18 (4.5)
Unmarried	369 (92.2)	382 (95.5)

Table no. 01B

Socio-demographic profile of adolescent girls		
Variables	Rural n (%)	Urban slum n (%)
Occupation of father		
Unemployed	0 (0.0)	4 (1.0)
Unskilled worker	80 (20.0)	123 (30.7)
Semiskilled worker	63 (15.7)	18 (4.5)
Skilled worker	192 (48.0)	79 (19.7)
Business	18 (4.5)	39 (9.7)
Employee/Professional	47 (11.7)	137 (34.3)
Occupation of mother		
Home maker	101 (25.3)	190 (47.5)
Unskilled worker	145 (36.3)	138 (34.5)
Semiskilled worker	15 (3.7)	13 (3.3)
Skilled worker	125 (31.2)	34 (8.5)
Business	2 (0.5)	8 (2.0)
Employee/Professional	12 (3.0)	17 (4.3)
Education of father		
Illiterate	221 (55.3)	96 (24.0)
Primary	57 (14.3)	61 (15.3)
Secondary	69 (17.3)	124 (31.0)
Intermediate	16 (4.0)	47 (11.7)
Degree & above	37 (9.3)	72 (18.0)
Education of mother		
Illiterate	291 (72.7)	163 (40.7)
Primary	62 (15.5)	92 (23.0)
Secondary	28 (7.0)	104 (26.0)
Intermediate	6 (1.5)	28 (7.0)
Degree & above	13 (3.2)	13 (3.3)

Majority of the adolescents were Hindus in the age group of 12 to 16 years in both the areas.

Table No. 02

Awareness of Menstruation among Adolescent girls		
Knowledge variables	Rural (N=400)	Urban (N=400)
	n (%)	n (%)
Knowledge on menstruation before attaining it		
Yes	148 (37)	195 (48.8)
No	252 (63)	205 (51.3)
Knowledge on organ of menstruation		
Uterus	20 (5)	28 (7.0)
External genitals	64 (16)	30 (7.5)
Stomach	20 (5)	37 (9.3)
Bladder	50 (12.5)	68 (17)
Don't know	246 (61.4)	237 (59.3)

Table No. 03

Awareness of Pregnancy and contraception among Adolescent girls		
Knowledge variables	Rural (N=400)	Urban (N=400)
	n (%)	n (%)
Knowledge about legal age of marriage for females		
10 - 15 yrs	6 (1.5)	6 (1.5)
15 - 17 yrs	7 (1.8)	10 (2.5)
≥ 18 yrs	190 (47.5)	219 (54.8)
Do not know	197 (49.3)	165 (41.3)
Knowledge about right age for child bearing		
10 - 15 yrs	2 (0.5)	1 (0.3)
15 - 17 yrs	11 (2.8)	6 (1.5)
≥ 18 yrs	77 (19.3)	64 (16)
Do not know	310 (77.5)	329 (82.3)
Knowledge about spacing between pregnancy		
1 yr	14 (3.5)	12 (3)
2 yrs	64 (16)	85 (21.3)
3 yrs	103 (25.8)	80 (20)
Do not know	219 (54.8)	223 (55.8)
Knowledge on contraception		
Yes	91 (22.8)	284 (71)
No	309 (77.3)	116 (29)
Knowledge on methods of contraception		
Abortion	11 (2.8)	1 (0.3)
Condom	35 (8.8)	41 (10.3)
Operation	5 (1.3)	4 (1)
O C pills	9 (2.3)	8 (2)
I pill	29 (7.3)	46 (11.5)
Do not know	2 (0.5)	16 (4)

Nearly 80% of adolescent girls in rural area were belonging to lower class and upper lower class whereas in urban slums about 80% were belonging to upper middle, lower middle and upper lower class and 31 adolescent girls in rural and 18 adolescent girls in urban slums were married.

Nearly half of the fathers in rural area were skilled workers and about one third of urban fathers were unskilled

workers and another one third was employees. About half of the urban mothers were home makers and another one third were unskilled workers where as in rural areas about one fourth of them were home makers, one third of them were unskilled labours and another one third were skilled workers. More than half of rural fathers were illiterate where as 75% of urban fathers were literate. About 73% of mothers in rural areas were illiterate and 41% of urban mothers were illiterate.

Table No. 04

Awareness of STDs and HIV among Adolescent girls		
Knowledge variables	Rural (N=400)	Urban (N=400)
	n (%)	n (%)
Knowledge on white discharge (leucorrhoea)		
Yes	171 (42.8)	140 (35)
No	229 (57.3)	260 (65)
Knowledge on probable cause of white discharge		
Infection	35 (8.8)	60 (15)
Normal	21 (5.3)	17 (4.3)
Eating heat items	20 (5)	3 (0.8)
Raw rice	13 (3.3)	8 (2)
Stomach ache	6 (1.5)	1 (0.3)
Do not know	76 (19)	51 (12.8)
Knowledge on HIV/AIDS (heard about of HIV/AIDS)		
Yes	320 (80)	324 (81)
No	80 (20)	76 (19)
Knowledge on Transmission of HIV		
Unprotected sex	19 (4.8)	32 (8)
Contaminated blood	7 (1.8)	12 (3)
Mother to child	10 (2.5)	6 (1.5)
unsterilized needles	13 (3.3)	35 (8.8)
All of the above	121 (30.3)	119 (29.8)
Do not know	134 (33.5)	104 (26)
Knowledge on prevention of HIV/AIDS		
Abstinence	16 (4)	3 (0.8)
Testing of blood and blood products	10 (2.5)	8 (2)
Use of condoms	0 (0)	6 (1.5)
Avoid contaminated needles	42 (10.5)	58 (14.5)
All of the above	92 (23)	105 (26.3)
Do not know	144 (36)	128 (32)

Nearly 50% of urban and 37% rural adolescent girls had knowledge about menstruation before attaining it and only 7% of urban and 5% of rural girls had knowledge about the organ of menstruation.

About 47.5% of rural girls and 54.8% of urban girls had the knowledge of legal age of marriage for females. Nearly

20% of the rural girls and 16% of urban girls had the knowledge of right age for child bearing.

Rural adolescent girls had better knowledge about spacing between pregnancy (25.8%) than the urban adolescent girls (20%) but urban girls had better knowledge about contraception (71%) when compared to rural girls (22.8%). Among adolescent girls who were aware of contraception, both urban and rural girls had more knowledge about condom and I pill.

Rural adolescent students had more knowledge about leucorrhoea (42.8%) compared to urban girls (35%) but urban girls had better knowledge about the probable cause of white discharge (15%) compared to rural girls (8.8%). In both the groups more than half of the girls did not have the knowledge of white discharge.

Nearly 80% of both rural and urban adolescent girls had heard about HIV/AIDS but 33.5% of rural girls and 26% of urban girls did not have the knowledge about the transmission of HIV. However about 30% of both the rural and urban girls had the

knowledge of all the modes of transmission of HIV. Similarly 23% of rural girls and 26.3% of urban girls had the knowledge of all the methods of preventing HIV.

Table No. 05

Univariate analysis of awareness about Menstruation				
Knowledge Variables	Present N (%)	Absent N (%)	OR (95% CI)	P value
Knowledge on menstruation before attaining it				
Rural (n=400)	148 (37)	252 (63)	1	
Urban (n=400)	195 (48.8)	205 (51.3)	1.61 (1.22 - 2.14)	0.00079
Knowledge on organ of menstruation				
Rural (n=400)	20 (5)	380 (95)	1	
Urban (n=400)	28 (7)	372 (93)	1.42 (0.79 - 2.61)	0.2385

Urban adolescent girls had higher odds [OR: 1.61, 95% CI: 1.22 - 2.14] of being knowledgeable about menstruation before attaining it compared to rural girls and this difference was found to be statistically significant. The odds of having better knowledge about organ of menstruation was more in urban adolescent girls compared to rural girls and was not found to be statistically significant.

Table No. 06

Univariate analysis of awareness about Pregnancy and contraception				
Knowledge variables	Present N (%)	Absent N (%)	OR (95% CI)	P value
Knowledge about legal age of marriage for females				
Rural (n=400)	190 (47.5)	210 (52.5)	1	
Urban (n=400)	219 (54.8)	181 (45.2)	1.33 (1.01 - 1.76)	0.04069
Knowledge about right age for child bearing				
Rural (n=400)	77 (19.3)	323 (80.7)	1.25 (0.86 - 1.80)	0.2296
Urban (n=400)	64 (16)	336 (84)	1	
Knowledge about spacing between pregnancy				
Rural (n=400)	167 (41.7)	233 (58.3)	1.02 (0.77 - 1.35)	0.8862
Urban (n=400)	165 (41.2)	235 (58.8)	1	
Knowledge on contraception				
Rural (n=400)	91 (22.8)	309 (77.3)	1	
Urban (n=400)	284 (71)	116 (29)	8.28 (6.04 - 11.43)	<0.00000
Knowledge on methods of contraception				
Rural (n=400)	89 (22.3)	311 (77.7)	1	
Urban (n=400)	100 (25)	300 (75)	1.16 (0.83 - 1.61)	0.3616

The odds of urban adolescent girls having better knowledge about legal age of marriage for females [OR: 1.33, 95% CI: 1.01 - 1.76] and contraception [OR: 8.28, 95% CI: 6.04 - 11.43] was more compared

to rural girls and this difference was found to be statistically significant.

The odds of rural adolescent girls having better knowledge about right age for child bearing [OR: 1.25, 95% CI: 0.86 -

1.80] and spacing between pregnancy [OR: 1.02, 95% CI: 0.77 - 1.35] was more

compared to urban girls and this difference was not found to be statistically significant.

Table No. 07

Univariate analysis of awareness about STD and HIV/AIDS				
Knowledge variables	Present N (%)	Absent N (%)	OR (95% CI)	P value
Knowledge on white discharge (leucorrhoea)				
Rural (n=400)	171 (42.8)	229 (57.3)	1.38 (1.04 - 1.84)	0.02486
Urban (n=400)	140 (35)	260 (65)	1	
Knowledge on probable cause of white discharge				
Rural (n=400)	35 (8.8)	365 (91.2)	1	
Urban (n=400)	60 (15)	340 (85)	1.83 (1.18 - 2.88)	0.0063
Knowledge on HIV/AIDS (heard about of HIV/AIDS)				
Rural (n=400)	320 (80)	80 (20)	1	
Urban (n=400)	324 (81)	76 (19)	1.06 (0.75, 1.51)	0.7223
Knowledge on Transmission of HIV				
Rural (n=400)	170 (42.5)	230 (57.5)	1.06 (0.80 - 1.40)	0.6679
Urban (n=400)	164 (41)	236 (59)	1	
Knowledge on prevention of HIV/AIDS				
Rural (n=400)	160 (40)	240 (60)	1	
Urban (n=400)	180 (45)	220 (55)	1.22 (0.92 - 1.62)	0.1536

Rural adolescent girls have higher odds [OR: 1.38, 95% CI: 1.04 - 1.84] of awareness of white discharge compared to urban girls but urban girls have higher odds [OR: 1.83, 95% CI: 1.18 - 2.88] of knowledge of probable cause of white discharge compared to rural girls and this difference was found to be statistically significant.

Rural adolescent girls have higher odds [OR: 1.06, 95% CI: 0.80 - 1.40] of knowledge on transmission of HIV compared to urban girls but urban girls have higher odds [OR: 1.22, 95% CI: 0.92 - 1.62] of knowledge on prevention of HIV compared to rural girls and this difference was not found to be statistically significant.

DISCUSSION

Reproductive health is defined by WHO as a state of physical, mental and social well-being, and not merely the absence of disease in all matters relating to the reproductive system at all stages of life. Reproductive health implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if,

when, and how often to do so. [9]

In India, adolescent girls (10-19 years) account for a little more than one fifth of the population (21.4%). [4] Reproductive health is very important among adolescent girls because they are going to be mothers of tomorrow whose awareness and knowledge about reproductive health and problems is at most important for improving the nutritional, health and educational status of children in the state.

In our study urban adolescent girls (48.8%) had higher odds [OR: 1.61, 95% CI: 1.22 - 2.14] of being knowledgeable about menstruation before attaining it compared to rural girls (37%) and this difference was found to be statistically significant (Table no. 05). Our results are in consonance with a study conducted by Parvathi Nair which revealed that nearly half (45.7%) of girls who had attained menarche and 29% of pre-pubertal girls had prior knowledge of menstruation. [10] However the knowledge about the organ of menstruation was less in both rural (5%) and urban (7%) adolescent girls was poor. Similar results were seen in a study done by Singh MM, Devi R, Gupta SS which showed that the awareness about the

process of menstruation was poor. ^[11] But in another study done in Guntur district, Andhra Pradesh, about 50% of rural adolescent girls had adequate knowledge about the organ of menstruation and the hormones responsible for menstruation. ^[12]

The odds of urban adolescent girls having better knowledge about legal age of marriage (54.8%) for females [OR: 1.33, 95% CI: 1.01 - 1.76] and contraception (71%) [OR: 8.28, 95% CI: 6.04 - 11.43] was more compared to rural girls and this difference was found to be statistically significant. (Table no. 06) The odds of rural adolescent girls having better knowledge about right age for child bearing (19.3%) [OR: 1.25, 95% CI: 0.86 - 1.80] and spacing between pregnancy (41.7%) [OR: 1.02, 95% CI: 0.77 - 1.35] was more compared to urban girls and this difference was not found to be statistically significant. (Table no. 06)

Similar results found by Saritha Agarwal, Alfiya Fathima, C M Singh where 51.2% of adolescent girls were aware of right legal age of marriage, 81.6% girls knew that pregnancy is preventable. ^[13] However in a study done by Benjamin A I, Panda P, Singh S, Bhatia A S showed higher percentage of girls (81%) knew the correct legal age of marriage for girls, 62% of girls preferred a gap of more than 2 years between the children and 87.3% of girls knew about oral contraceptive pill. ^[14]

In consonance with our study results a study done by Shubhangna Sharma, Shipra Nagar and Goldy Chopra ^[15] revealed that 43.7% of rural adolescent girls perceived the age of 26-30 years as ideal child bearing age followed by 31.2% for 18-25 years and 65% of girls stated that 1-2 years as the ideal birth spacing followed by 3 to 5 years (34.8%) and most of them knew about family planning methods and in a similar study done by Singh MM, Devi R, Gupta SS which showed that most of adolescent girls knew about importance, duration of child

spacing and the need for three medical examinations during pregnancy. ^[11] In another study 60% of both the school dropout girls and school going girls had knowledge about right age of child bearing. ^[16]

Rural adolescent students had more knowledge about leucorrhoea (42.8%) compared to urban girls (35%) but urban girls had better knowledge about the probable cause of white discharge (15%) compared to rural girls (8.8%). In both the groups more than half of the girls did not have the knowledge of white discharge. In similar study done by Saritha Agarwal, Alfiya Fathima, C M Singh, only 10% of the adolescent girls knew about leucorrhoea. ^[13] In our study nearly 80% of both rural and urban adolescent girls had heard about HIV/AIDS (Table no. 04). Awareness of HIV/AIDS was similar to studies done by Gaash Basir, Ahmed Muzaffer, Kasur Rehana and Bashir Shabnam ^[17] and other studies conducted elsewhere. ^[15,16,18]

However in a study done by Bhanu NB, Maharajan P, Sondhi M, ^[19] the awareness about HIV/AIDS was very low.

In our study 33.5% of rural girls and 26% of urban girls did not have the any knowledge about the transmission of HIV and only about 30% of both the rural and urban girls had the knowledge of all the modes of transmission of HIV (Table no. 04). Our results are in consonance with the study done by Gaash Basir, Ahmed Muzaffer, Kasur Rehana and Bashir Shabnam. ^[17] However in some studies ^[15,16] The awareness about modes of transmission of HIV/AIDS was a little over 90% among the adolescent girls.

In our study 23% of rural girls and 26.3% of urban girls had the knowledge of all the methods of preventing HIV (Table no. 04). Our results are in consonance with National Family Health Survey 2005-06 ^[20] reports, where only 20% of females had a

comprehensive knowledge about HIV/AIDS, which includes knowledge about condoms as a preventive measure and study done by Gaash Basir, Ahmed Muzaffer, Kasur Rehana and Bashir Shabnam. [17] But differing results were revealed by Nidhi Kotwal, Neelima Gupta and Rashi Gupta [16] where in majority of school dropout girls (90%) and school going girls (86%) knew about prevention of HIV/AIDS.

CONCLUSIONS

The overall awareness with respect to menstruation, pregnancy and contraception and symptoms of STDs like white discharge and its causes was low where in more than half of both urban and rural students were not aware about the reproductive health issues. However the awareness levels of HIV/AIDS, its mode of transmission and prevention were more.

There was a statistically significant difference in the awareness levels between urban and rural adolescent girls with respect to knowledge about menstruation before attaining it, knowledge about legal age of marriage for females and contraception, knowledge about white discharge and its causes.

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