



Exploring Adolescent Girls' Health: A Cross-Sectional Study

KEYWORDS

Adolescent girls, Cross-sectional study, Allahabad

Dr Arshiya Masood

Associate Professor Department of Community Medicine Government Medical College Kannauj (UP)

Dr S Dwivedi

Professor Department of Community Medicine MLN Medical College Allahabad (UP)

Dr Narendra Tiwary

Lecturer in Biostatistics Department of Community Medicine Government Medical College Kannauj (UP)

ABSTRACT A cross sectional study was carried out on adolescent girls (15-19 years) in rural and urban areas of Allahabad district of Uttar Pradesh with the objectives 1. To explore adolescent girls' opinion regarding some social issues related to their life 2. To assess their menstrual hygiene and reproductive health problems 3. To assess their perception regarding RTI/STDs including HIV/AIDS 4. To provide suggestive measures if required. 167 girls from rural and 97 girls from urban areas were selected randomly from 5 villages in rural areas and 2 blocks in urban areas. A low awareness on various important issues regarding RTIs/STDs, unsatisfactory menstrual hygiene was found. Moreover 20% girls were having menstrual problems and 16% girls were suffering from RTIs as per syndromic approach. A need to address their simple but distinctive needs was felt in a friendly way.

Introduction:

Adolescence i.e. 10-19 years of age (WHO) is a transitional phase between childhood and adulthood marked by rapid physical, physiological and psychological changes. Adolescents have extreme pressure from peers, parents, society and self. They lack knowledge and skill to cope up with this pressure. The knowledge and practices applied during this crucial phase affects their health and happiness in later life. From experiment to experience they need our help, support and guidance.

Earlier it was thought that adolescents are healthy segment of population but now it has been found that they bear considerable burden of disease. Improvement in health status of adolescents has intergenerational impact. A comprehensive and systematic surveillance on adolescent health in India is almost non-existent. In India, adolescent girls account for nearly 11% of the population but remain an invisible group¹. Investment in their health will help India in achieving a healthy and socioeconomically productive society.

Adolescent girls have added disadvantages because of their vulnerability and gender discrimination. They have simple but crucial reproductive health needs ranging from menstrual hygiene, contraception, and safety from sexually transmitted diseases (STDs) including HIV/AIDS. There also exists a communication gap with parents and other adults especially on these issues. This study was carried out with the aims and objectives

1. To explore adolescent girls' opinion regarding some social issues related to their life
2. To assess their menstrual hygiene and reproductive health problems
3. To assess their perception regarding RTI/STDs including HIV/AIDS
4. To provide suggestive measures if required.

Materials & Methods:

A cross sectional study was conducted in Allahabad district during 2004 -2005 on adolescent girls. We included girls between 15-19 years because on the basis of pilot survey it was found that girls between 10-14 years of age were reluctant to answer the questions related to reproductive health and moreover their parents did not give permission to ask these questions to their daughters. Based on approximately 22 per cent adolescent population in India, of which approximately 11per cent adolescent girls considering 5 per cent permissible error and 95 per cent confidence interval a sample size of 160 adolescent girls was calculated. Giving proper allocation to rural and urban population (72% rural and 28% urban) a sample size of 115 and 45 was calculated for rural and urban areas respectively. Accordingly 167 girls from rural areas and 97 from urban areas were selected from five villages in rural areas and two blocks in urban areas by simple random sampling method. Girls were interviewed using a predesigned, pre-coded and pretested proforma based on a pilot study after explaining the nature of study thereby getting implied consent. Data were entered on excel sheets and analysed by statistical package SPSS Version 16.0. The data was presented by frequency along with their percentages for categorical variables.

Results & Discussion:

Table1: Awareness regarding Adolescence and Opinion on some social Issues among Adolescent Girls

| A | Knowledge of adolescent girls about changes in body in adolescence | Rural N=168 , No. (%) | Urban N=97 No. (%) | Total N=265 No. (%) |
|----|--|-----------------------------|--------------------------|---------------------------|
| i. | Appearance of pimples | 41(24.4) | 34 (35.1) | 75(28.3) |
| | Breast development | 104(61.9) | 63(64.9) | 167(63.0) |
| | Weight gain | 47(28.0) | 31(32.0) | 78(29.4) |
| | Initiation of menstruation | 137(81.5) | 83(85.6) | 220(83.0) |
| | Oily skin | 27(16.1) | 17(17.5) | 44(16.6) |
| | Growth of pubic and axillary hair | 57(33.9) | 33(34.0) | 90(34.0) |

| | | | | |
|-----------|--|--------------|-------------|--------------|
| | Others(Change in thought pattern, emotions etc.) | 7(4.1) | 0(0.0) | 7(2.0) |
| | Don't know | 12(7.1) | 9(9.3) | 21(7.9) |
| B. | Important source of information about body changes | N=156 | N=88 | N=244 |
| | School Teacher | 0(0.0) | 3(3.1) | 3(1.2) |
| | Mother | 70(44.9) | 46(52.3) | 116(47.5) |
| | Father/Brother | 0(0.0) | 2(2.2) | 2(0.8) |
| | Friends/Relatives | 83(53.1) | 27(30.6) | 110(45.1) |
| | Doctor/ANM/AWW | 0(0.0) | 5(5.6) | 5(2.0) |
| | Books/Magazine/Film/Video | 2(1.3) | 5(5.7) | 7(2.9) |
| | Others | 5(3.2) | 6(6.2) | 11(4.5) |
| C. | Opinion of girls about preferential age of marriage (girls) | N=168 | N=97 | N=265 |
| | <18 years | 35(20.8) | 3(3.1) | 38(14.3) |
| | 18-20 years | 123(73.2) | 69(71.1) | 192(72.5) |
| | 21-25 years | 8(4.8) | 23(23.7) | 31(11.7) |
| | 25+years | 2(1.2) | 2(2.1) | 4(1.5) |
| D. | Opinion about preferred age for first child | | | |
| | <18 years | 22(13.1) | 2(2.1) | 24(9.1) |
| | 18-20 years | 64(38.1) | 26(26.8) | 90(34.0) |
| | 21-25 years | 79(47.0) | 61(62.8) | 140(52.8) |
| | 25+ | 3(1.8) | 8(8.2) | 11(4.1) |
| E. | Opinion about ideal gap between two children | | | |
| | 1 year | 5(3.0) | 2(2.1) | 7(2.6) |
| | 2 years | 82(48.8) | 25(25.8) | 107(40.4) |
| | 3 years | 53(31.5) | 40(41.2) | 93(35.1) |
| | 4 years | 15(8.9) | 8(8.2) | 23(8.7) |
| | 5+ years | 13(7.7) | 22(22.7) | 35(13.2) |
| F. | Opinion about number of children a couple should have | | | |
| | One | 2(1.2) | 10(10.3) | 12(4.5) |
| | Two | 51(30.4) | 68(70.1) | 119(44.9) |
| | Three or more | 115(68.4) | 19(19.6) | 134(50.6) |

It can be observed from Table 1 that about 92 per cent of girls in both the areas had knowledge about changes in body during adolescence. The most common changes were initiation of menstruation (83%) followed by breast development (63%). A study² revealed that only 63 percent of girls had knowledge of menstruation before attaining menarche. Another study³ reported that only 30 per cent girls in rural and 20 per cent in urban areas had knowledge of female reproductive organs. Another area of grave concern is only a negligible portion (2%) knew psychological changes do occur during adolescence. The important source of information was mother (47%) followed by friends & relatives (45%). Some other studies echoed the same findings⁴. Other channels contributed little in transmission of knowledge. Information should reach by multiple channels to increase its impact.

Table IC depicts opinion of adolescent girls regarding some socially relevant issues. Majority of the girls in both the areas (73.2% in rural and 71.1% in urban areas) were of view that age of marriage for girls should be between 18-20 years of age. However 20.8 per cent girls in rural areas and a small number (3.1%) of girls in urban areas felt that it should be below 18 years of age.. Similarly 9 per cent girls (13% in rural & 2% in urban areas) were of opinion that conceivable age should be below 18 years. Clearly they did not know that when a mother is under 18, her risk of dying in the first year of life is 60 per cent more than that of a baby born to mother over the age of 18 years⁵. The correct knowledge of conceivable age was revealed

by only 34 per cent of girls in a study³. In this study 42 per cent told that ideal gap between two children should be two year or less. 68.4% girls in rural areas wanted to have three or more children while maximum girls (80.3%) in urban areas expressed the opinion of one or two. Awareness and attitude determines behaviour, so a need to correct their knowledge and behaviour is felt.

Table 2: Knowledge regarding Menstruation among Adolescent Girls'

| A. | Heard about menstruation | Rural N=168 No. (%) | Urban N=97 No. (%) | Total N=265 No. (%) |
|------------|--|---------------------------|--------------------------|---------------------------|
| | Yes | 159(94.6) | 86(88.7) | 245(92.5) |
| | No | 9(5.4) | 11(11.3) | 20(7.5) |
| | Girls presently having menstruation | 154(91.7) | 83(85.6) | 237(89.4) |
| B. | Age at menarche | N=154 | N=83 | N=237 |
| | <12 years | 15(9.7) | 4(4.7) | 19(8.0) |
| | 13 years | 55(35.7) | 50(60.2) | 105(44.3) |
| | 14 years | 65(42.2) | 22(25.9) | 87(36.7) |
| | 15+ years | 19(12.3) | 7(8.4) | 26(11.0) |
| C. | Articles used during menstruation | N=154 | N=83 | N=237 |
| | Sanitary pads | 2(1.3) | 19(22.1) | 21(8.8) |
| | Home made cotton pads | 4(2.6) | 4(4.7) | 8(3.4) |
| | Clean cloth | 141(91.6) | 58(69.9) | 199(84.0) |
| | Clean cloths washed & dried | 7(4.5) | 2(2.3) | 9(3.8) |
| D. | Problems related to menstruation during last three months | | | |
| | Yes | 27(17.5) | 20(24.1) | 47(19.83) |
| D1 | Menstruation related problem | N=27 | N=20 | N=47 |
| | No period | 1(3.7) | 1(5.0) | 2(4.2) |
| | Painful period | 18(66.7) | 15(75.0) | 33(70.2) |
| | Frequent or short periods | 1(3.7) | 0(0.0) | 1(2.1) |
| | Delayed periods | 2(7.4) | 1(5.0) | 3(6.4) |
| | Prolonged bleeding | 1(3.7) | 1(5.0) | 2(4.2) |
| | Excessive bleeding | 3(11.1) | 1(5.0) | 4(8.4) |
| | Scanty bleeding | 1(3.7) | 1(5.0) | 2(4.2) |
| | Inter menstrual bleeding | 0(0.0) | 0(0.0) | 0(0.0) |
| D-2 | Treatment taken | N=27 | N=20 | N=47 |
| | Yes | 3(11.1) | 16(80.0) | 19(40.4) |
| D-3 | Place of treatment | N=3 | N=16 | N=19 |
| | Govt. Health Facility | 0(0.0) | 2(12.5) | 2(10.5) |
| | Private hospital | 2(66.7) | 9(56.2) | 11(57.9) |
| | Home | 1(33.3) | 3(18.8) | 4(21.1) |
| | Others (Quacks) | 0(0.0) | 2(12.5) | 2(10.5) |
| E. | Does the girl wants more information about menstruation process | N=168 | N=97 | 265 |
| | Yes | 98(58.3) | 55(56.7) | 153(57.7) |

Regarding menstruation 92 per cent girls had heard about menstruation while 89.4 per cent were having menstruation. The age of menarche was 13 years+ in about 92 per cent of girls. The mean age of menarche was reported to be 12.7 years in a study⁴. Majority (84%) of the girls (91% in rural & 69.9% in urban areas) were using clean cloths (as they perceived) while only 8.8 percent used sanitary pads and 3.8% clean and dried cloths. Use of sanitary pads was 24%⁶ and 36%⁷ in some studies. Around 20% experienced problems related to menstruation during last 3

months. Most common was dysmenorrhoea (70%) followed by excessive bleeding (8.4%). A study⁶ reported dysmenorrhoea as the most common problem (63.7%). A total of 40 per cent girls sought treatment, more in urban areas (80%) than in rural areas (11.1%), mostly in private hospitals (57.9%). A sizable number of girls (57.7%) were keen to have more information on menstruation.

Table 3: Knowledge of Adolescent Girls' about Reproductive Tract Infections (RTI)

| A | Knowledge of RTI | Rural N=168 , No. (%) | Urban N=97 No. (%) | Total N=265 No. (%) |
|----------|---|-----------------------------|--------------------------|---------------------------|
| | Yes | 35(20.8) | 37(38.1) | 72(27.2) |
| B | Source of information | N=35 | N=37 | N=72 |
| | Radio | 9(25.7) | 8(21.6) | 17(23.6) |
| | TV | 4(11.4) | 19(51.4) | 23(31.9) |
| | News papers/magazines | 4(11.4) | 11(29.7) | 15(20.8) |
| | Wall writings/hoardings | 2(5.7) | 1(2.7) | 3(4.2) |
| | Parents/Friends/relatives | 24(68.6) | 12(32.4) | 36(50.0) |
| | Doctor | 3(8.8) | 4(10.8) | 7(9.7) |
| | Health workers | 2(5.7) | 3(8.1) | 5(6.9) |
| | School teacher | 4(11.4) | 5(13.5) | 9(12.5) |
| | Others(neighbours) | 1(2.9) | 3(8.1) | 4(5.6) |
| C | Perception whether RTI is curable | N=35 | N=37 | N=72 |
| | Curable | 22(62.9) | 29(78.4) | 51(70.8) |
| | Not curable | 13(37.1) | 8(21.6) | 21(29.2) |
| D | H/o problems of RTI in last 3 months | N=168 | N=97 | N=265 |
| | Yes | 22(13.1) | 21(21.7) | 43(16.2) |
| | | N=22 | N=21 | N=43 |
| | Abnormal vaginal discharge | 2(9.1) | 4(19.1) | 6(13.95) |
| | Genital ulcer | 0(0.0) | 1(4.8) | 1(2.3) |
| | Pain/tenderness in lower abdomen | 17(77.3) | 18(85.7) | 35(81.4) |
| | Low backache | 18(81.8) | 16(76.2) | 34(79.1) |
| | Frequent/burning during micturition | 4(18.2) | 3(14.3) | 7(16.3) |
| E | Consultation sought | N=22 | N=21 | N=43 |
| | Yes | 6(27.3) | 8(38.1) | 14(32.6) |
| F | Place where consultation sought | N=6 | N=8 | N=14 |
| | Govt. health facility | 2(33.3) | 2(25.0) | 4(28.6) |
| | Pvt. Hospital | 0(0.0) | 4(50.0) | 4(28.6) |
| | Home | 2(33.3) | 1(12.5) | 3(21.4) |
| | Others(Quacks) | 2(33.3) | 1(12.5) | 3(21.4) |

Table 3 shows the knowledge and awareness of adolescent girls regarding reproductive tract infections (RTIs). Only 27.2 per cent girls (20.8% in rural and 38.1% in urban areas) had knowledge about RTIs, which is almost similar to a study⁸ on kurmi adolescent girls in Raipur (29.4%). For girls in rural areas main source of this information were friends and relatives (68.6%) while urban girls acquired this knowledge mostly from audio-visual media (73.0%) and print media (29.7%). Health personnel and school teachers contributed little to impart this knowledge in both the areas. The role of other channels in disseminating the information was disappointing and needs to be enhanced. Among those who had knowledge of RTIs, 62.9% girls in rural areas and 78.4% in urban areas thought that RTIs are curable. The misconception that RTI is not curable in about one-third of girls is alarming as it will inevitably affect their treatment seeking behaviour. .

History of adolescent girls having problems of RTIs in the last three months revealed that more girls in urban areas (21.7%) reported problem than their rural counterparts

(13.1%). This fact may be misleading as girls in urban areas are usually more forthcoming than girls in rural areas. Maximum girls in both the areas had pain and tenderness in lower abdomen and low back ache followed by abnormal vaginal discharge and burning micturition. A study⁹ in Kolkata by R Ram et al found 64 per cent girls suffering from RTI, mostly from excessive vaginal discharge (35%) followed by pain and tenderness in lower abdomen/low backache and burning micturition (12%). Only 27.3 per cent girls in rural and 38.1 per cent in urban areas sought treatment. More girls in urban areas sought treatment from hospitals either private (50%) or government (25%) than girls in rural areas (33 % in government hospitals).

Table 4: Knowledge of Adolescent girls regarding HIV/AIDS

| A | Heard about HIV/AIDS | Rural N=168 , No. (%) | Urban N=97 No. (%) | Total N=265 No. (%) |
|-----------|---|-----------------------------|--------------------------|---------------------------|
| | Yes | 49(29.2) | 68(70.1) | 117(44.15) |
| B. | Source of information about HIV/AIDS | N=49 | N=68 | N=117 |
| | Radio | 19(38.8) | 20(29.4) | 39(33.3) |
| | TV | 25(51.0) | 63(92.6) | 88(75.2) |
| | Newspaper/magazine | 9(18.5) | 15(22.1) | 24(20.5) |
| | Wall writing/Hoarding | 6(12.2) | 4(5.9) | 10(8.5) |
| | Friends/Relatives | 18(36.7) | 12(17.6) | 30(25.6) |
| | Doctor/Health worker | 1(2.0) | 11(16.2) | 12(10.3) |
| | School teacher | 4(8.1) | 7(10.3) | 11(9.4) |
| | Others | 1(2.0) | 2(2.9) | 3(2.6) |
| C. | Knowledge about modes of transmission of HIV/AIDS | N=49 | N=68 | N=117 |
| | Homosexual inter course | 2(4.1) | 10(14.7) | 12(10.3) |
| | Heterosexual inter course | 20(40.8) | 40(58.8) | 60(51.3) |
| | Needles/Blades/Skin puncture | 27(55.1) | 45(66.2) | 72(61.5) |
| | Mother to child | 8(16.3) | 21(30.9) | 29(24.8) |
| | Transfusion of infected blood | 17(34.7) | 38(55.9) | 55(47.0) |
| | Don't know | 13(26.5) | 7(10.3) | 20(17.1) |
| D. | Wrong perception regarding transmission of infection from infected to non-infected | N=49 | N=68 | N=117 |
| | Shaking hands | 5(10.2) | 1(1.5) | 6(5.1) |
| | Hugging | 4(8.2) | 2(2.9) | 6(5.1) |
| | Kissing | 4(8.2) | 2(2.9) | 6(5.1) |
| | Sharing cloths | 2(4.1) | 2(2.9) | 4(3.4) |
| | Sharing eating utensils | 5(10.2) | 3(4.4) | 8(6.8) |
| | Stepping on urine/stools | 5(10.2) | 3(4.4) | 8(6.8) |
| | Mosquito, Flea or bedbug bites | 3(6.1) | 5(7.4) | 8(6.8) |
| | Don't know | 0(0.0) | 8(11.8) | 8(6.8) |
| E. | Knowledge regarding possible ways of prevention of HIV/AIDS | N=49 | N=68 | N=117 |
| | Sex with only one partner | 16(32.7) | 24(35.3) | 40(34.2) |
| | Using condom correctly during each sexual inter course | 11(22.5) | 18(26.5) | 29(24.8) |
| | Checking blood for HIV prior to transfusion | 18(36.7) | 24(35.3) | 42(35.9) |

| | | | | |
|-----------|--|--------------|-------------|--------------|
| | Sterilizing needles and syringes for injection | 21(42.9) | 26(38.2) | 47(40.2) |
| | Avoiding pregnancy when having HIV/AIDS | 6(12.2) | 11(16.2) | 17(14.5) |
| | Don't know | 14(28.6) | 9(13.2) | 23(19.7) |
| F. | Knowledge whether HIV/AIDS is curable or not | N=49 | N=68 | N=117 |
| | Curable | 9(18.4) | 9(13.2) | 18(15.4) |
| | Not curable | 23(46.9) | 46(67.6) | 69(59.0) |
| | Don't know | 17(34.7) | 13(19.1) | 30(25.6) |
| G. | Place of preference for information about reproductive health | N=168 | N=97 | N=265 |
| | School | 9(5.4) | 10(10.3) | 19(7.2) |
| | Youth group | 15(8.9) | 8(8.3) | 23(8.7) |
| | Special youth clinic | 1(0.6) | 4(4.1) | 5(1.9) |
| | General practitioner | 24(14.3) | 21(21.7) | 45(17.0) |
| | Member of family | 114(67.9) | 46(47.4) | 160(60.4) |
| | Others (TV, radio) | 9(5.4) | 8(8.3) | 17(6.4) |

Table 4 shows that girls in urban areas were more (70.1%) aware of term HIV/AIDS than their rural counterparts (29.2%). A study¹⁰ found 76% school going and 96% drop outs were aware of the term AIDS. The main source of information was TV in urban areas (92.6%) and TV/radio (89.8%) in rural areas followed by friends and relatives (36.7% in rural and 17.6% in urban areas). This is in consonance with some other study⁸. Similarly girls (who heard HIV) in urban areas were better aware (89.7%) than girls in rural areas (73.5%) regarding modes of transmission of HIV/AIDS. 59% to 66% knew that it can be transmitted by heterosexual intercourse, infected needles and blades, skin puncture or transfusion of infected blood while only 35% to 55% girls in rural areas knew about these modes of transmission. The number of girls in urban areas (30.9%) was almost double of the girls in rural areas (16.3%) who knew that an HIV infected mother can give infection to her unborn child. Average score of knowledge of students about HIV/AIDS was reported to be 94 percent in a study¹⁰. Wrong perceptions regarding modes of transmission was present among girls both in rural (10.2%) and urban areas (7.4%). Regarding knowledge about possible ways of prevention of HIV infection nearly 33 to 43% girls in rural and 35-38% in urban areas had knowledge of the three important ways of prevention namely sex with only one partner, testing blood for HIV infection prior to transfusion and sterilizing needles and syringes for injections. Besides this, 22.5% girls in rural and 26.5% in urban areas knew that condom to be used correctly during sexual in-

tercourse. Some 12.2% in rural and 16.2% in urban areas felt that pregnancy should be avoided if a woman is found to be HIV positive. A study¹⁰ in Jammu reported average scores on protection of HIV/AIDS as 86% in school going girls and 90% in drop out girls. Regarding cure, 18.4% girls in rural and 13.2% in urban areas had wrong perception that HIV is curable while 34.7% in rural and 19.1% in urban areas didn't know whether it is curable or not. On being asked about the place of preference for acquiring more information about reproductive health, majority (67.9% in rural & 47.4% in urban areas) replied that they would prefer to seek more information from their own family members.

Conclusion and Recommendations:

A low awareness on various important issues regarding RTIs/STDs including HIV/AIDS, unsatisfactory menstrual hygiene and sanitary practices were found among adolescent girls, which is alarming. Moreover 20% girls were having menstrual problems and 16% girls were suffering from RTIs as per syndromic approach in the last three months. Their simple and distinctive needs should be met in a friendly way. There is need to mobilize key influencers and influencers in their life-at home, in school so that they can realize their potential.

REFERENCE

- UNFPA (2003) Adolescent girls in India: A profile | 2. Sinha S, Modi JN; Psychosocial aspects of changes during adolescence among school going Indian girls. *Int J Reprod Contracept Obstet Gynecol* 2014;3:409-13 | 3. Singh A, Rathore R; Consciousness of reproductive health among rural and urban adolescent girls. *Indian J Community Med*, 2010 Oct-Dec; 35(4):529-530. | 5. UNICEF 2007; State of world's children | 6. Nair P, Grover VL, Kannan AT. Letter to editor: Awareness and Practices of menstruation and pubertal changes amongst unmarried female adolescents in a rural area of east Delhi; *Indian Journal of Community Medicine*, Vol.32, issue2, April 2007 pg 156-157 | 7. Paudel DP, Paudel L. Perceived behaviour & practices of adolescents on sexual & reproductive health & associated factors in Kathmandu. *Nepal Muller J Mrd Sci Res* 2014;5:106-12 | 8. Patanwar P, Sharma KKN. Awareness of Reproductive Health among the Kurmi Adolescent Girls of Raipur City, Chattisgarh India. *Int J Res Health Sci* 2013 ;1(3):126-33. | 9. R Ram, SK Bhattacharya, K Bhattacharya, B Baur, T Sarkar, A Bhattacharya, D Gupta; Reproductive Tract Infection Among Female Adolescents *Indian Journal of Community Medicine* Vol.31, No.1, Jan-March 2006 | 10. Kotwal N, Gupta N, Gupta R; Awareness of Reproductive Health among Rural Adolescent girls :A Comparative study of school going girls and drop out girls in Jammu, *Stud Home Comm Sci*;2(2): 149-154 (2008) |