ORIGINAL RESEARCH ARTICLE
pISSN 0976 3325 | eISSN 2229 6816
Open Access Article
www.njcmindia.org

A Community Based Cross-Sectional Study on Awareness Regarding Pubertal Changes and Reproductive Health among Adolescent Girls in an Urban Area of Belagavi

Suhasini Kanyadi[1], Chandra S Metgud[2]

Financial Support: None declared
Conflict of Interest: None declared

How to cite this article:
Kanyadi S, Metgud CS. A Community Based Cross-Sectional Study on Awareness Regarding Pubertal Changes and Reproductive Health among Adolescent Girls in an Urban Area of Belagavi. Natl J Community Med 2018; 9 (12): 846-850

Author's Affiliation:
[1]Asst Prof, Dept of Community Medicine, USM KLE, IMP, Belagavi;
[2]Professor, Dept of Community Medicine, JNMC, KLE university, Belagavi

Correspondence
Dr. Suhasini Kanyadi
suha_kanyadi@ymail.com

Date of Submission: 02-07-18
Date of Acceptance: 03-12-18
Date of Publication: 31-12-18

ABSTRACT

Introduction: Most of the adolescents have little or no knowledge of the body's impending physical and physiological changes. This study was planned to assess the knowledge regarding the pubertal changes and the knowledge, belief and treatment seeking practices regarding reproductive health among adolescent girls.

Methods: A community based cross-sectional study was conducted over a period of one year among 625 adolescent girls (16-19 years) in an urban area of Belagavi. Systematic sampling technique was used and data collected using a pre-tested questionnaire.

Result: Knowledge regarding pubertal changes among adolescent girls varied between fair to poor. Among 625 adolescent, 150 (24.0%) had infection related to reproductive tract, among them only 1 (0.7%) girl approached a gynaecologist and 104 (69.3%) approached a qualified doctor for treatment. There was an increase in number of girls practicing cleaning of external genitalia who had correct knowledge regarding perineal hygiene predisposing to RTI as compared to girls who had incorrect knowledge which was statistically significant ($\chi^2 = 65.0$, df =1, $p<0.01$)

Conclusion: Adolescent are not a homogenous group and the existing intra-cultural differences in our nation calls for the urgent need to identify the underlying cause and design an appropriate program to address them.

Keywords: Reproductive health, Pubertal changes, Adolescent girls

INTRODUCTION

Adolescence is ideally a healthy period, having the lowest mortality and morbidity compared with other population age groups. However, the period of adolescence, beginning with the onset of puberty, is a crucial transition into adulthood.[1] Most of the adolescents go this phase with little or no knowledge of the body's impending physical and physiological changes.[2] In a country like India, where discussion about sexuality with young children is almost absent, adolescents are not prepared mentally or psychologically to cope with these changes. Among adolescents, girls constitute a more vulnerable group, particularly in developing countries, where they are traditionally married at an early age and exposed to greater risk of reproductive morbidity and mortality.[3] Some of the public health challenges for adolescents include pregnancy, excess risk of maternal and infant mortality, sexually transmitted infections (STI), reproductive tract infections (RTI), and the rapidly rising incidence of Human Immunodeficiency Virus (HIV) infection in this age group.[4] Reproductive health, in particular, represents the most critical area where an emphasis on the special needs and con-

cerns of adolescents is required. It is an umbrella concept, consisting of several distinct, yet related issues such as menstruation, abortion, child birth, sexuality, contraception and maternal mortality. Reproductive morbidities such as dysmenorrhea, pre-menstrual syndrome, irregular menses, excessive bleeding during menstruation etc. are common in adolescent girls. In spite of this, health care seeking for reproductive morbidities is very low. Most of the adolescent girls remain silent without seeking health care. If these are not treated early, they could lead to various reproductive disabilities.[5] Also in the Indian context, adolescent girls enter into reproductive life, with early marriage, pregnancies and child bearing resulting in detrimental effects to their general and reproductive health.[6] Bangladesh had one of the highest levels of adolescent childbearing, followed by Nepal and India.[7] Data on awareness regarding reproductive health and pubertal changes of this young population are scarce, without which, meaningful programs cannot be implemented. Majority studies on adolescents are school based and few studies have been done at community level. Thus, this study was planned with the objective of assessing the knowledge of late adolescent girls regarding the pubertal changes and to assess the knowledge, belief and treatment seeking practices regarding reproductive health.

MATERIALS AND METHODS:

The present study was a community based cross-sectional study conducted over a period of one year from 1st January to 31st December 2014 among 625 late adolescent girls (16-19 years) in Ashoknagar, an urban area of Belagavi. The sample size was calculated by using the formula n=4 pq/d2 where, p=39% (prevalence of knowledge about menstruation).[2] Systematic sampling technique was used to interview adolescent girls, by visiting every third house. A detailed questionnaire was prepared and was pretested and validated during the pilot study which included information on socio-demographic variables, knowledge regarding pubertal changes, knowledge, belief and practice regarding reproductive health. All the subjects were informed about the purpose of the study and after obtaining informed consent from the study subjects between the age group of 18–19 years and assent from 16-17 years old subjects they were interviewed. The study was approved by the Institutional Ethics Committee for Human Subject's Research, Jawaharlal Nehru Medical College, Belagavi Letter No. MDC/DOME/92. It took about 20-30 minutes for interviewing a study subject. Adolescent girls between the age group of 16-19 years, residing in Ashoknagar at least for the period of one year were included in the study and the girls who had not attained menarche were excluded from participating in the study.

Statistical Analysis: Data was entered in Excel sheet after coding. SPSS (trial version) 21.0 software was used for analysis of the data. Numerical variables were analyzed as means and standard deviations. Categorical data were summarized using percentages and Chi-square test was used to test the association between variables.

Table 1: Distribution of adolescent girls according to knowledge regarding pubertal changes

Variables	Girls (n=625) (%)
Increase in Breast size	
Yes	449 (71.8)
No	176 (28.2)
Growth of axillary and pubic hair	
Yes	368 (58.9)
No	257 (41.1)
Broadening of hips	
Yes	144 (23)
No	481 (77)
Appearance of facial acne	
Yes	339 (54.2)
No	286 (45.8)
Facial skin becomes oily	
Yes	428 (68.5)
No	197 (31.5)
Increase in height	
Yes	304 (48.6)
No	321 (51.4)
Increase in weight	
Yes	133 (21.3)
No	492 (78.7)

Table 2: Distribution of adolescent girls according to their knowledge regarding Reproductive Health

Variables	Girls (n=625) (%)
What is ovulation?	
Know	221 (35.4)
Do not know	404 (64.6)
What is fertilization?	
Know	293 (46.9)
Do not know	332 (53.1)
Poor perineal hygiene predisposes to RTI	
Yes	464 (74.3)
No	27 (4.3)
Do not know	134 (21.4)
Legal age of marriage for Male	
Correct	345 (55.2)
Incorrect	280 (44.8)
Legal age of marriage for Female	
Correct	428 (68.5)
Incorrect	197 (31.5)
Organ responsible for menstruation	
Uterus	355 (56.8)
Stomach	111 (17.8)
Kidney	35 (5.6)
Do not know	124 (19.8)

RESULTS

In our study, the mean age (±SD) of the respondents was 17.4±1.09 years and median was 17.5 years. Majority 530 (84.8%) of the adolescent girls were studying and 95 (15.2%) of them had stopped studying at the time of our study.

Maximum 178 (28.5%) of study participants belonged to class IV socioeconomic followed by 176 (28.2%) from class III and 124 (19.8%) from class II, 82 (13.1%) and 65 (10.4%) from classes V and I respectively according to the modified B.G. Prasad classification. Amongst the 49 married adolescents in our study, 28 (57.1%) of them had already started their family. Out of them, 17 (34.7%) were primigravida and 11 (22.4%) were multigravida. Of the 11 late adolescent girls who had previous pregnancies, 3 (27.3%) had abortion, 1 (9.1%) had infant death and 7 (63.6%) of the participants children were alive and healthy.The mean age (±SD) of menarche was 12.8±1.73 years. The study showed that 625 (100%) adolescent girls knew that menstruation begins when the pubertal changes are complete whereas, knowledge regarding broadening of hips 144 (23.0%) and increase in weight 133 (21.3%) among late adolescent girls was poor. (Table 1) Among 625 adolescent girls, 464 (74.3%) girls knew that poor perineal hygiene predisposes to RTI, whereas 134 (21.4%) did not know about it and 27 (4.3%) of them thought poor perineal hygiene doesn't predispose to RTI. Also, 355 (56.8%) of them knew that uterus was the organ responsible for menstruation whereas, 111 (17.8%) said stomach, 35 (5.6%) said kidney and 124 (19.8%) of them did not know the organ responsible for menstruation. (Table 2) Total 316 (50.6%) of the adolescent girls knew at least one symptom of RTI and 47 (7.5%) knew about two or more symptoms of RTI. White discharge per vagina 113 (18.1%), low backache 69 (11.1%), urinary tract infection 52 (8.3%) and 42 (6.9%) menorrhagia were the most commonly known symptoms of RTI. (Table 3)

Majority, 452 (72.3%) girls believed that the sex education should be provided in high school. Of the 173 girls, reasons given for not wanting sex education to be imparted in school were, 100 (57.8%) girls felt it made them uncomfortable and 73 (42.2%) girls didn't find it was necessary to know about it. Regarding contraception, 276 (44.2%) girls believed that long term usage of contraception will lead to infertility whereas 167 (26.7%) of them rightly believed it would not. Most of them 398 (63.7%) of them believed that condom provides protection against STD/AIDS. (Table 4) In our study, 150 (24.0%) of the study participants had infection related to reproductive tract. Of the 150 subjects, only 1 (0.7%) girl approached a gynaecologist for treatment and 104 (69.3%) approached a qualified doctor other than a gynaecologist. (Table 5)

Table 3: Distribution of late adolescent girls according to their knowledge regarding RTI

Variables	Girls (n=625) (%)
Symptom of RTI	
White discharge	113 (18.1)
Lower abdominal pain	69 (11.1)
Urinary tract infection (UTI)	52 (8.3)
Menorrhagia	43 (6.9)
Genital ulcer	32 (5.1)
Vulval itching	7 (1.1)
More than one symptom	47 (7.5)
Do not know	262 (41.9)
Long term effects of RTI	
Infertility	203 (32.5)
Persistent abdominal pain	80 (12.8)
UTI	61 (9.8)
Chronic backache	15 (2.4)
Do not know	266 (42.5)

Table 4: Distribution of late adolescent girls according to their beliefs regarding Reproductive Health

Variables	Girls (n=625) (%)
Sex education should be given in high school	
Yes	452 (72.3)
No	173 (27.7)
Who is responsible for sex of the child	
Husband	78 (12.5)
Wife	202 (32.3)
Both	321 (51.4)
Do not know	24 (3.8)
Long term usage of contraception leads to infertility	
Yes	276 (44.2)
No	167 (26.7)
Do not know	182 (29.1)
Condom provides protection against STD/AIDS	
Yes	398 (63.7)
No	147 (23.5)
Do not know	80 (12.8)

Table 5: Distribution of adolescent girls according to reproductive tract infection and treatment seeking behaviour

Variables	Girls (n=625) (%)
Reproductive tract infection	
Yes	150 (24)
No	475 (76)
Reproductive Tract Infection symptom (N=150)	
Burning micturition	62 (9.9)
White discharge per vagina	44 (7)
Vulval Itching	36 (5.8)
Genital ulcer	8 (1.3)
Treatment seeking behavior (N=150)	
Doctor other than gynaecologist	104 (69.3)
Anganwadi worker	21 (14)
Gynaecologist	1 (0.7)
Home remedy	1 (0.7)
No treatment	23 (15.3)

Table 6: Association between knowledge and practice regarding perineal hygiene

Perineal hygiene	Correct practice (n=330) (%)	Incorrect practice (n=295) (%)	Total (n=625)
Correct knowledge	289 (62.3%)	175 (37.7%)	464
Incorrect knowledge	41 (25.5%)	120 (74.5%)	161

χ^2= 65.0; df=1; p <0.01

Also, 228 (36.5%) of adolescent girls had one or the other menstrual problem. Of them, 50 (21.9%) girls approached a gynaecologist for treatment worker and 102 (44.7%) of the girls did not do anything for the menstrual problem. There was an increase in number of girls practicing cleaning of external genitalia who were having correct knowledge regarding perineal hygiene predisposing to RTI as compared to girls who had incorrect knowledge which was statistically significant (χ^2 = 65.0, df =1, p<0.01). However, it was found that 289 (62.3%) of the study participants who had correct knowledge practiced cleaning external genitalia and 175 (37.7%) of them did not practice perineal hygiene which shows a gap in knowledge and practice. (Table 6)

DISCUSSION

The mean age (±SD) at menarche was 12.8±1.73 years and majority of the adolescent girls, 26.7% and 23% were 13 and 12 years old respectively when they attained menarche. A study conducted in Belgaum reported the mean age at menarche to be 13.62±0.91years which is slightly higher than our study.[7] Also, another study conducted in urban slum of Mumbai[4] revealed that majority (54.4%) of the subjects had attained menarche by the age of 13 – 14 years. Knowledge regarding pubertal changes among study participants varied between fair to poor. Knowledge regarding changes like increase in breast size 71.8 %, facial skin becomes oily 68.5%, axillary and pubic hair growth 58.9%, appearance of acne on the face 54.2% and increase in height 48.6% was fair enough whereas, knowledge regarding broadening of hips 23.0% and increase in weight 21.3% was poor. A study conducted in Karapa mandal East Godavari[8] revealed that 58.3% of girls had knowledge about growth spurt, 55.8% about breast enlargement, 65.0% girls about pubic and axillary hair growth which was slightly different from our study. In contrast with our study, another study conducted in Dharwad[9] showed that 56.7% girls knew about primary sex characteristics (menses) and few respondents knew about secondary sex characteristics such as height and weight (75.0%), pubic hair (19.2%), breast enlargement (14.4%) and hips enlargement (9.6%). In our study, 35.4% adolescents knew about ovulation and 46.9% regarding fertilization which is less when compared to the study undertaken in Udupi[10] were 46.5% of girls knew about ovulation and 54.5% about fertilization. Regarding perineal hygiene, 74.3% girls knew that poor perineal hygiene predisposes to RTI which is slightly more when compared to the study conducted in Bangladesh[11] were 68.3% of the girls knew about it. More number of girls knew the legal age of marriage for female 68.5% as compared to legal age of marriage for male 55.2% in India which is slightly more when compared to a study which was conducted in Dharwad[9] were 56.0% of the girls knew the legal age of marriage for female. In was found that, 50.6% of the adolescents knew at least one symptom of RTIs and 7.5% knew about two or more symptoms of RTI. White discharge per vagina 18.1%, low backache 11.1%, urinary tract infection 8.3%, menorrhagia 6.9% were the most common symptoms known. A study conducted in Jammu[12] found that, 32.0% of girls were aware of two or more symptoms of R.T.I followed by itching over vulva 26%, ulcers of vulva 35%, lower abdominal pain 13%, pain during intercourse 11%, abnormal vaginal discharge 37%, abnormal bleeding 17%. Nearly half, 47.5% of the participants were aware about the long term effects of RTI. In this study, 72.3% of the girls believed that the sex education should be provided in high school. A study done at Chattisgarh[13] found that 90.4% wanted sex education in school curriculum which is high when compared to our study. Most 51.4% of the girls believed that both husband and wife were responsible for the sex of the child and only 78 12.5% correctly believed husband was responsible whereas a study conducted in Rajasthan[6] showed, 20.0% of the girls believed that both husband and wife were responsible for the sex of the child. Around 44.2% of the girls believed that long term usage of contraception will lead to infertility which is similar to the misconception that contraceptives predispose women to both primary and secondary infertility in the study conducted in southern and northern Ghana[14]. In this study 63.7% of the respondents believed that condom provides protection against STD/HIV which was slightly high when compared to a study done in South Delhi[15] were 59.0% believed condoms provided protection against STD/HIV and 22% weren't sure on this. Regarding treatment seeking behaviour for reproductive tract problems, only 0.7% approached a gynaecologist, 69.3% approached a qualified doctor, 14.0% sought the help of Anganwadi worker and 15.3% did not do anything for the problem. Treatment seeking practice was more for reproductive tract problem as compared to menstrual problems. However, more number of girls having menstrual problem

approached a gynaecologist as compared to only 0.7% of girls who approached a gynaecologist for reproductive tract problem. A study conducted in Nagpur[16], found that 65.2% were having one or more reproductive morbidity. A high prevalence of dysmenorrhea, 53.6% was found among adolescent girls. Other common morbidities were menorrhagia (16.1%), irregular cycles (11.2%) and a few girls (5.4%) reported of having excessive white discharge. Only 33.7% girls sought heath care and 62.3% girls remained silent without seeking health care. Our study also reported that increase in knowledge, lead to increase in correct practice. However, even after having correct knowledge regarding perineal hygiene 37.7% did not clean external genitalia showing a gap in knowledge and practice. A higher percentage of girls used to practice washing of genital area according to a conducted in South India.[17]

CONCLUSION

The present study reported fair to poor knowledge regarding pubertal changes among adolescent girls. There were few misconceptions like person responsible for the sex of the child, legal age of marriage for male and female in India, wrong beliefs' regarding reproductive health and the treatment seeking practice for reproductive tract problems was on the better side, but specialist care was sought by very few of them. However, there was a gap in knowledge and practice among adolescent girls which needs to be addressed.

RECOMMENDATIONS

Adolescent are not a homogenous group and the existing intra-cultural differences in our nation calls for the urgent need which can identify the underlying cause and design an appropriate programme to address them. Information on human reproductive system and related issues on reproductive health need special attention. Teachers' sensitization to "adolescent health care" with the help of health professionals is required. Mobiles are very common among adolescents. Broadcasting of reproductive health messages would be effective through mobiles also for school dropouts.

REFERENCES:

1. Strategy Handbook. Rashtriya Kishor Swasthya Karyakram [Internet]. Adolescent Health Division Ministry of Health and Family Welfare Government of India;2014. [cited 2018 June 8] Available from: http://www.expandnet.net/PDFs/India_RKSK_Strategy%20Operational_Framework_2014.pdf
2. Kanyadi S, Metgud CS. Menstruation: gap in knowledge, belief and practice among adolescent girls in an urban area of Belagavi. Int J Community Med Public Health 2017; 4: 3640-44.
3. Ganchimeg T, Ota E, Morisaki N, Laopaiboon M, Lumbiganon P, Zhang J, et al. Pregnancy and childbirth outcomes among adolescent mothers: a World Health Organization multi-country study. BJOG: An Intl J Obs Gynaec 2014; 121 (Suppl.1): 40-48.
4. Bobhate PS, Shrivastava SR. A cross sectional study of knowledge and practices about reproductive health among female adolescents in an urban slum of Mumbai. Journal of Family and Reproductive Health 2013; 5 (4): 117-124.
5. Nair MKC. Adolescent Sexual and Reproductive Health. Indian Journal of Paediatrics 2004; 41 (1): 7-13.
6. Dube S, Sharma K. Knowledge, attitude and practices regarding reproductive health among urban and rural girls: A comparative study. Ethno Med 2012; 6 (2): 85-94
7. Rani M, Lule E. Exploring the socioeconomic dimensions of adolescent's reproductive health: A multicounty analysis. Intl Family Planning Perspectives 2004; 30 (3):110-117
8. Pokhrel S, Mahantashetti N, Angolkar M, Devkota N. Impact of Health Education on knowledge, attitude and practice regarding menstrual hygiene among pre-university female students of a college located in urban area of Belgaum. IOSR J Nursing Health Sci. 2014;3 (4):38-44.
9. Naidu SA, Vennam BSV, Prasad KVS. Knowledge about reproductive health among adolescent high school girls (rural) in Karapa mandal, East Godavari district. International Journal of Research in Health Sciences 2012; 2 (2): 543-545.
10. Hunshal SC, Pujar LL, Netravati HS. Reproductive health knowledge among rural adolescent girls. Karnataka Journal of Agricultural Sciences 2010; 23 (3): 544-546.
11. Rao RSP, Leena A, Nair NS, Kamath V, Kamath A. Effectiveness of reproductive health education among rural adolescent girls: a school based intervention study in Udupi taluk, Karnataka. Indian J Med Sci 2008; 62 (11): 439-443.
12. Haque SE, Rahman M, Itsuko K, Mutahara M,Sakisak K. The effect of a school-based educational intervention on menstrual health: an intervention study among adolescent girls in Bangladesh. Bio Med Journal Open 2014; 4: 1-9.
13. Kotwal N, Gupta N, Gupta R. Awareness of Reproductive Health among Rural Adolescent Girls (A comparative study of school going girls and dropout girls of Jammu). Studies on Home Community Science 2008; 2 (2): 149-154.
14. Haldar A, Ram R, Chatterji T, Mishra R, Jordar GK. A study of need of awareness generation regarding a component of reproductive and child health programme. Indian Journal of Paediatrics 2006; 29 (2): 96-98.
15. Adongo PB, Tabong PTN, Thomas B, Azongo B, Phillips JS, Sheff MC, et al. A comparative qualitative study of misconceptions associated with contraceptive use in southern and northern Ghana. Frontiers in Public Health 2014: 4: 1-7.
16. McManus A, Dhar L. Study of knowledge, perceptions and attitude of adolescent girls towards STIs/HIV, safer sex and sex education: Cross sectional study of urban adolescent school girls in South Delhi, India. BMC Women Health 2008; 8 (12): 472-478.
17. Kulkarni MV, Durge PM. Reproductive Health Morbidities among adolescent girls: Breaking the Silence. Ethno Med 2011; 5 (3): 165-168.
18. Omidvar S, Begum K. Factors influencing hygienic practices during menses among girls from South India- A cross sectional study. Intl J Collaborative Res on Internal Med Public Health. 2010; 2 (12): 411-423.