Original Article

Association of reproductive health problems amongst adolescent girls in central India

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Abstract

AIM: To study association of reproductive health problems amongst adolescent girls. World Health Organization (WHO) defines adolescents as age group 10–19 years[1]. It is a period of transition from childhood to adulthood and is marked by rapid physical, physiological and psychological changes. India with different religion, geography and taboos have many problems related to reproductive health of adolescents, in 14-15 million adolescent girls aged 15-19 give more than 10% of births worldwide. Adolescent girls face health risks during pregnancy and childbirth accounting for 15% of the Global Burden of Disease for maternal conditions and 13% of all maternal deaths. Adolescent mothers aged 15-19 are more likely than older mothers to die in childbirth, while very young mothers aged 14 and under are at highest risk. Many have dropped out of school, have low social status and do not access health services. Young mothers more likely to have low birth-weight babies, at risk of malnourishment, poor development or death. Infant and child mortality is highest amongst children of adolescent mothers. India has articulated its commitment to promoting and protecting the sexual and reproductive rights of adolescents and youth through its policies and in several forums. Keeping all above facts in mind this study was planned to study association of different parameters with reproductive health problems among adolescent girls in a town. **Methodology:** Present study was a cross sectional study, for reproductive health problems among adolescent girls, married or unmarried in a town. **Result:** Adolescents girls had problems of dysmenorrhoea, abnormal vaginal discharge, had irregular menses, excessive menses and backache 74.3%, 33.9%, 29.3%, 23.1% and 12.5% respectively with prevalence of reproductive health problem was 59.1%. Odds of having reproductive health problem(RHP) was 3.19 times more in late adolescent age group as compared to early adolescent and was statistically significant. A significant association was found with religion. Odds of having RHP were 4.32 times higher in girls doing household work compared to adolescent girls in service. Odds of having RHP was 2.54 times higher in adolescent girls who attained menarche at 13-14 years compared to girls whose age at menarche was 11-12 years and it was found to be statistically significant. **Conclusion**: RHPs like dysmenorrhoea, abnormal vaginal discharge, had irregular menses, excessive menses are widely prevalent in Central rural India suggest need to have some concern over different parameters like education, socioeconomic status and sanitary practices.

Keywords: Reproductive health problems (RHPs), Adolescent girls, dysmenorrhoea, abnormal vaginal discharge.

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INTRODUCTION

World Health Organization (WHO) defines adolescents as age group 10–19 years.[1] It is a period of transition from childhood to adulthood and is marked by rapid physical, physiological and psychological changes. This period results in sexual, psychological and behavioral maturation. Adolescents are a diverse group and are in varying situations of risk, status and environments. Each of these groups has varying concerns and need to be appreciated as distinct segments of the population. India with different religion, geography and taboos have many problems related to reproductive health of adolescents, in14-15 million adolescent girls aged 15-19 give more than ten per cent of births worldwide. Adolescent girls

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face health risks during pregnancy and childbirth accounting for 15% of the Global Burden of Disease for maternal conditions and 13% of all maternal deaths. Adolescent mothers aged 15-19 are more likely than older mothers to die in childbirth, while very young mothers aged 14 and under are at highest risk. A WHO review of adolescent pregnancy says that age alone may not be the cause education, social status and use of health facilities are all contributing factors. It is also difficult to separate risks related to age and the extra risks related to a first pregnancy. However, adolescent mothers are both young and mostly first time mothers. Many have dropped out of school, have low social status and do not access health services. Young mothers are more likely to have low birth-weight babies, at risk of malnourishment, poor development or death. Infant and child mortality is highest amongst children of adolescent mothers. Girls who give birth miss schooling and opportunities for employment. There is a risk of the cycle repeating itself. Many adolescent pregnancies are not merely unplanned but also unwanted, as seen by the estimated 2.2 to 4 million adolescent girls who obtain abortions each year. Because they are less likely to have access to legal and safe abortion, adolescents are estimated to account for 14% of all unsafe abortions, performed by people who lack the necessary skills in an environment lacking minimal medical standards[2]. India has articulated its commitment to promoting and protecting the sexual and reproductive rights of adolescents and youth through its policies and in several forums. The National Population Policy 2000, the National AIDS Prevention and Control Policy 2002, the National Youth Policy 2003 and the Reproductive and Child Health (RCH) Program (I and II) 1997; 2005 are key examples of the recognition that the sexual and reproductive rights of adolescents require urgent attention.[3] Keeping all above facts in mind this study was planned to study association of different parameters with reproductive health problems among adolescent girls in a town.

MATERIAL AND METHODS

Study Design

The present study was a cross sectional study, undertaken to study the reproductive health problems among adolescent girls, married or unmarried (10-19 years) in a town area of Maharashtra from June 2010 to April 2011. The population of study area was 1, 15, 566 distributed in 39 wards according to Census 2001[4].

Sample Size and Sampling Technique

The sample size was calculated considering the prevalence of reproductive tract infection of 64 % as reported by Ram *et al*[5] with 5% alpha error, 10% relative error in the estimate of prevalence and design effect of 2.5. 10% non-response was added to calculate the sample size.

Sample size (n) = $[(z_\alpha^{(2)} \text{x pq} / L^2]$ x Design effect + 10% non response

n = $\{[(1.96)^2$ x 64 x 36] / $(6.4)^2\}$ x 2.5 + 10% non response

Therefore n = 540+54=594

(p = prevalence, q = 100-P, L=Allowable error by 10% of p,

$\alpha = 0.05$ then $Z_\alpha = 1.96$, Design effect = 2.5)

Thirty cluster sampling method was used to select study subjects. Thus, it was decided to survey 20 adolescent girls from each cluster to cover the desired sample size of 594 from 30 clusters.

Data Collection

Each cluster was located with the help of map of the area. Then the centre of the cluster and boundaries were located. A glass bottle was rotated in the centre of cluster to select a lane randomly. After selecting a lane, all households on the left hand side was numbered and starting household was selected randomly and subsequent household were identified by moving on the right-hand side of previous household. The study was conducted with prior written informed consent from the study participant. The data was collected by interview method through household visit using a pre-structured and pre-tested questionnaire. Socio-demographic characteristics: Survey of household was carried based on consecutive households in the selected population. The study tool included a detailed description of demographic characteristics of families, socioeconomic status. Modified Prasad's classification for socioeconomic status was used for determining socioeconomic status of adolescent girls[6]. Following information was included in questionnaire. Reproductive tract problem: A detailed information of reproductive health problem was asked viz. problem regarding menstrual cycle, any present or past history of abnormal vaginal discharge, genital ulcers or rash, itching around vulva/vagina, lower abdominal pain, pain in passing urine, increase frequency of micturition and backache.

Statistical Analysis

Data was entered and analyzed using EPI 2000. Results were reported as percentages, odds ratio and 95% confidence interval. P-value <0.05 was considered as statistically significant.

Ethical Consideration

Information regarding reproductive health problems was given to adolescent girls. Girls with reproductive health problem detected in present study were referred to nearest government health care facility. Adolescent girls and their mothers were counseled regarding menstrual hygiene and reproductive health needs of adolescent girls. Ethical

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permission taken from Institutional ethical committee (IEC).

RESULTS

Table 1, shows reproductive health problems present in adolescent girls. Out of total 594 adolescent girls 351 (59.1%) had reported at least one reproductive health problems whereas 243 (40.9%) adolescent girls did not had any complaint.

Table 1: Reproductive health problems

Reproductive health problem	No. of adolescent girls	Percentage
Present	351	59.1
Absent	243	40.9
Total	**594**	**100**

Fig 1 shows distribution of reproductive health problems. Out of total 351 adolescent girls 74.35% had complaint of dysmenorrhoea, 33.90% girls had reported symptom of abnormal vaginal discharge, 29.3% girls had complaint of irregular menses, 23.1% girls reported complaint of excessive menses >7-8 days, backache in 12.5% girls, itching around vagina/vulva in 9.4% girls and genital ulcer or rash in 5.4% of adolescent girls. symptom of lower abdominal pain, increased frequency in passing urine and pain while passing urine found in 3.9%, 2.5%, and 1.4%, of adolescent girls respectively. Out of 7 married adolescent girls, painful intercourse present in 1.4% adolescent girls.

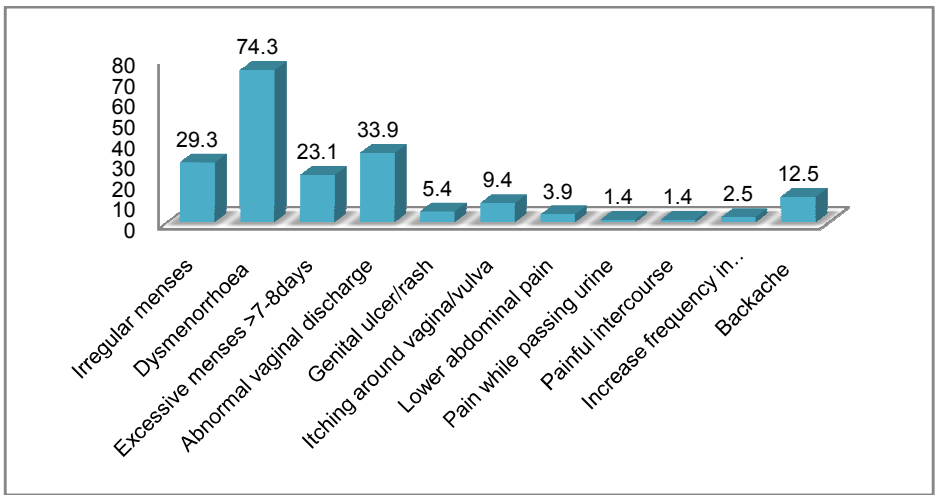

Figure 1: Reproductive health problems

Table 2, shows that reproductive health problems were more in late adolescent age group in 287(66.9%) as compared to early adolescent girls in 64 (38.8%). odds of having reproductive health problems was 3.19 times (95% CI: 2.16-4.71; p: <0.05) more in late adolescent age group as compared to early adolescent age group which was statistically significant.

Table 2: Association of age with reproductive health problems

Age group	Reproductive health problems		Total N=594	OR (95%CI)
	Present N=351	Absent N=243		
Early adolescent	64(38.8)	101(61.2)	165(100)	1
Late adolescent	287(66.9)	142(33.1)	429(100)	3.19* (2.16-4.71)

(Figures in parenthesis denotes percentages, *p-value < 0.05)

Table 3 shows that odds of having reproductive health problems was 2.48 times (95% CI: 0.93-6.69; p<0.05) more in adolescent girls who belongs to Buddhist religion as compared to Muslim girls, which was statistically significant. Odds of having reproductive health problems was 2.37 times (95% CI: 1.03-5.55; p<0.05) more in adolescent girls who belongs to Hindu religion as compared to Muslim girls, which was statistically significant.

Table 3: Association of religion with reproductive health problems

Religion	Reproductive health problems		Total N=594	OR (95%CI)
	Present N=351	Absent N=243		
Hindu	284(60.6)	185(39.4)	469(100)	2.37* (1.03-5.55)
Muslim	11(39.3)	17(60.7)	28(100)	1
Buddhist	45(61.6)	28(38.4)	73(100)	2.48* (0.93-6.69)
Others	11(45.8)	13(54.2)	24(100)	1.31 (0.38-4.57)

(Figures in parenthesis denotes percentages, *p-value < 0.05)

Table 4 shows there was significant prevalence of reproductive health problems in girls with high school education or more which is 3.45 times more (95% CI: 2.23-5.35; p<0.05) as compared to middle school educated girls and association was statistically significant.

Table 4: Association of education with reproductive health problems

Education	Reproductive health problems		Total	OR (95%CI)
	Present N=349	Absent N=241	N=591**	
Middle school	43(35.2)	79(64.8)	122(100)	1
High school or more	306(65.2)	163(34.8)	469(100)	3.45* (2.23-5.35)

(Figures in parenthesis denotes percentages, *p-value < 0.05). (Note: **As numbers of illiterate and primary educated girls were very few, therefore excluded from analysis.)

Table 5 shows that, the prevalence of reproductive health problems was highest among girls busy in household work (83.33%) followed by girls who were studying (59.09%) and (54.54%) in girls in service. Odds of having reproductive health problems was 1.20 times (95% CI: 0.56-2.57; p>0.05) more in adolescent girls who were studying compared to girls in service but association was statistically not significant. Odds of having reproductive health problems was 4.32 times (95% CI: 1.67-11.3; p<0.05) more in girls who were doing household work compared to adolescent girls in service, and association was statistically significant.

Table 5: Association of occupation with reproductive health problems

Occupation	Reproductive health problems		Total N=594	OR (95%CI)
	Present N=351	Absent N=243		
Student	328(59.1)	227(40.9)	555 (100)	1.20 (0.56-2.57)
Household work	5(83.3)	1(16.7)	6(100)	4.32* (1.67-11.3)
Service	18(54.5)	15(45.5)	33(100)	1

(Figures in parenthesis denotes percentages *p-value <0.05)

Table 6 shows that odds of having reproductive health problems was 0.52 times (95% CI: 0.15-1.64; p>0.05) more in adolescent girls in poor class compared to upper high class girls but association was statistically not significant. Odds of having reproductive health problems was 0.70 times (95% CI: 0.20-2.28; p>0.05) more in lower middle adolescent girls compared to upper high class girls but association was statistically not significant.

Table 6: Association of socioeconomic status with reproductive health problems

Socioeconomic class	Reproductive health problems		Total N=594	Odds (95%CI)
	Present N=351	Absent N=243		
Class I : Upper high	12(70.5)	5(29.5)	17(100)	1
Class II : High	44(66.6)	22(44.4)	66(100)	0.83 (0.22-3.00)
ClassIII : Upper middle	46(56.7)	35(43.3)	81(100)	0.55 (0.15-1.89)
Class IV : Lower middle	104(62.6)	62(37.4)	166(100)	0.70 (0.20-2.28)
Class V : Poor	145(55.3)	117(44.7)	262(100)	0.52 (0.15-1.64)
Class VI : Very poor or below poverty line	-	2(100)	2(100)	-

(Figures in parenthesis denotes percentages)

Table 7 shows that odds of having reproductive health problems was 1.69 times (95% CI: 0.84-3.38; p>0.05) more in adolescent girls who attained menarche at 15 years or more compared to girls whose age at menarche was 11-12 years but it was not statistically significant. odds of having reproductive health problems was 2.54 times (95% CI: 1.43-4.53; p<0.05) higher in adolescent girls who attained menarche at 13-14 years compared to girls whose age at menarche was 11-12 years and association was statistically significant.

Table 7: Association of age at menarche with reproductive health problems

Age at menarche (years)	Reproductive health problems		Total N =511	OR (95%CI)
	Present N=351	Absent N=160		
11-12	33(51.6)	31(48.4)	64(100)	1
13-14	257(73)	95(27)	352(100)	2.54*(1.43-4.53)
≥ 15	61(64.2)	34(35.8)	95(100)	1.69 (0.84-3.38)

(Figures in parenthesis denotes percentages) (*p-value <0.05)

Table 8 shows that odds of having reproductive health problems was 1.24 times (95% CI: 0.79-1.94; p>0.05) more in adolescent girls who did not have prior knowledge about menstruation as compared to girls who had prior knowledge about menstruation before first experiencing it and association was statistically significant.

Table 8: Association of prior knowledge about menstruation and reproductive health problems

Prior knowledge	Reproductive health problems		Total N=511	OR (95%CI)
	Present N=351	Absent N=160		
Yes	251(67.2)	121(32.8)	372(100)	1
No	100(71.9)	39(28.1)	139(100)	1.24 (0.79-1.94)

(Figures in parenthesis denotes percentages, *p-value < 0.05)

Table 9 shows that odds of having reproductive health problems was 1.2 times (95% CI: 0.81-1.80; p>0.05) more in adolescent girls who used piece of cloth compared to girls who used sanitary pads during menstruation but association was statistically not significant.

Table 9: Association of type of cloth with and reproductive health problems

Type of cloth	Reproductive health problems		Total N=511	OR (95%CI)
	Present N=351	Absent N=160		
Piece of cloth	224(70)	96(30)	320(100)	1.2 (0.81-1.80)
Sanitary pads	127(66)	64(34)	191(100)	1

(Figures in parenthesis denotes percentages)

DISCUSSION

Prevalence of reproductive health problem was (59.1%) similar to findings of Ram *et al*[5]. Most common reproductive problem was dysmenorrhoea (74.3%) and findings are similar to Balasubramanian P[7], Paul *et al*[8] and Rani *et al*[9]. Other reproductive problems were abnormal vaginal discharge, irregular menses and excessive menses more than 7- 8days, backache, itching around vagina/vulva and Genital ulcer or rash. In our study reproductive health problem (66.9%) was more in the late adolescent age group compared to early adolescent girls. odds of having reproductive health problem was 3.19 times more in late adolescent age group as compare to early adolescent age group which was statistically significant this which is same with findings of Dutt *et al*[10]. In our study odds of having reproductive health problems was 2.4 times more in adolescent girls who belongs to Buddhist religion as compared to Muslim girls, which was statistically significant which is in contrast with findings of Balasubramanian *et al*.[7] odds of having reproductive health problem was 4.32 times higher in girls who were doing household work compared to adolescent girls in service, and was statistically significant. In contrast to study done by Balasubramanian *et al*[7] there was no significant relationship observed between occupation and reproductive morbidity. In our study odds of having reproductive health problem was 2.54 times higher in adolescent girls who attained menarche at 13-14 years compared to girls whose age at menarche was 11-12 years and it was found to be statistically significant. Dutt *et al*[10] also found same. In our study odds of having reproductive health problem was 1.2 times higher in adolescent girls who used a piece of cloth compared to girls who used sanitary pads during menstruation but it were not statistically significant. Similarly study done by Khanna *et al*[11] found that prevalence of RTIs was more than three times higher among girls having unsafe menstrual practices.

CONCLUSION

Adolescents girls had problems of dysmenorrhoea, abnormal vaginal discharge, had irregular menses, excessive menses and backache 74.3%, 33.9%, 29.3%, 23.1% and 12.5% respectively. Prevalence of reproductive health problem was 59.1%. Odds of having reproductive health problem was 3.19 times more in late adolescent age group as compared to early adolescent and was statistically significant. A significant association was found with religion. Odds of having reproductive health problem were 4.32 times higher in girls doing household work compared to adolescent girls in service. Odds of having reproductive health problem was 2.54 times higher in adolescent girls who attained menarche at 13-14 years compared to girls whose age at menarche was 11-12 years and it was found to be statistically significant. Reproductive health problems for adolescent girls significant in rural India, where dysmenorrhoea, abnormal vaginal discharge, had irregular menses, excessive menses are widely prevalent" suggest need to have some concern over different parameters like education, socioeconomic status and sanitary practices.

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