

PREGNANCY IN ADOLESCENCE: IS IT REALLY A CONCERN?Prachi Sauarbh Koranne¹, Aparna R. Wahane²**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: BACKGROUND: Adolescence means a transitional stage of physical and mental human development, involving biological, social and psychological changes. It occurs between 10-19 years of age as The World Health Organization (WHO) suggested. Pregnancy in this transitional stage is a common public health problem and social phenomenon with medical consequences worldwide. In this context adolescent pregnancy has been a problem with adverse obstetric and neonatal outcomes being influenced by biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition and stress. Socio-economic, cultural, geographic and racial factors are also associated with teenage pregnancy. Due to increasing awareness and effects of media there has been increase in the use of contraception but the problem of teenage pregnancy is very much prevalent as child marriages are still prevalent in Indian community. Early marriage and confinement are contributing factors to high maternal, peri-natal mortality and morbidity. A female can become pregnant as early as two weeks before menarche, although rare, but usually occurs after menarche. The World Health Organization estimates that the risk of death following pregnancy is twice as great for women between 15 and 19 years than for those between the ages of 20 and 24yrs. The maternal mortality rate can be up to five times higher for girls aged between 10 and 14yrs than for women of about twenty years of age. Illegal abortion also holds many risks for teenage girls. **OBJECTIVE:** To assess the magnitude of the problem of teenage pregnancy. To study the risk and complications faced during pregnancy and labour. **MATERIALS AND METHODS:** A hospital-based cohort study was undertaken over 2 years from January 2012 to December 2013 among women attending outpatient department and in indoor clinics at a tertiary care hospital in Akola Maharashtra. The study cohort comprised of teenage mothers between 15-19 years old and a control cohort of mothers between 20-30 years old. Data included demographic variables, available medical records and complications viz. anemia, preterm delivery and low birth weight. Anemia was defined as a hemoglobin level below 10 gm% during the last trimester of pregnancy, preterm delivery was defined as occurring within 37 weeks of gestation and low birth weight was defined as babies weighing less than 2500 grams at birth. Patients were followed in delivery and up to 6 weeks in puerperium. **RESULT:** Teenage pregnancy comprised 24.17% of total pregnancies occurring in the hospital during the study period. The study group had 232 subjects and the control group had 364 subjects. The prevalence of anemia was significantly higher ($P < 0.05$) in the women in the teenage group (62.96%) than in the women in the control group (43.59%). However, severe anemia with a hemoglobin level below 8 gm% was only found in the control group. Preterm delivery occurred significantly more ($P < 0.001$) in the study group (51.72%) than in the control group (25.88%). The incidence of low birth weight was significantly higher ($P < 0.0001$) among the group of teenagers (65.52%) than among the women in the control group (26.37%). Not a single newborn was above 3kgs in the study group, while none were below 1.5kgs in the control group. The mean birth weight was 2.36kgs in the study group and 2.74kgs in the control group; the difference was strongly significant ($P < 0.001$). **CONCLUSION:** The

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study shows that anemia, preterm delivery, and low birth weight were more prevalent among teenagers than among women who were 20-30 years old. This indicates the need for enhancing family welfare measures to delay the age at first pregnancy, thereby reducing the multiple complications that may occur in the young mother and her newborn baby. The delivery should be conducted in a hospital under trained medical person.

KEYWORDS: Anemia, complications, low birth weight, preterm delivery, teen pregnancy.

INTRODUCTION: Health, in addition to its biomedical determinants, is influenced by many social and cultural factors. One such social determinant of serious consequences on the nation as a whole is pregnancy in an adolescent girl, who herself is yet to attain her full growth potential.^(1,2)

This is the period when structural, functional and psychosocial developments occur in a child to prepare her for assuming the responsibility of motherhood.

Child marriage and early confinement is a long established custom in India, with poverty and ignorance magnifying the problem.⁽³⁾ In our country, teenage pregnancies after marriage, in contrast to unwed pregnancies in developed countries, have social approval but have an adverse impact on maternal mortality and perinatal morbidity.

Pregnancy in very young women is generally considered to be a very high risk event, because teenage girls are physically and psychologically immature for reproduction. In addition, there are some extrinsic factors such as inadequate prenatal care, illiteracy and poor socio-economic conditions that affect the outcome of pregnancy in teenage girls.⁽⁴⁻⁶⁾

Several medical complications like preterm birth, poor maternal weight gain, pregnancy-induced hypertension, anemia and sexually transmitted diseases are strongly associated with teenage pregnancy.⁽²⁾ It also adversely affects the status of women. In last 3 decades there is general improvement in the nutritional status associated with consistent fall in age of menarche.

Many young girls are hence physically mature and have knowledge of contraception. It should be therefore expected that there is fall in incidence and complications of teenage pregnancy in last decade.

MATERIALS AND METHODS: A cross sectional, institution-based study was undertaken at Government medical college, Akola from January 2011 to December 2013. The study group consisted of 232 teenage mothers between 15-19 years old who visited OPD and were admitted to and delivered in the hospital during the study period. The control group consisted of 364 mothers between 20-30 years old who were admitted to and delivered in the same hospital during the same period. This group was chosen as the control group because adverse outcomes are expected to be least in this group.⁽¹¹⁾

Clearance for the study was taken from the Ethical Committee of our medical college. It was a descriptive study and no intervention was done. The data collected using a pretested, semi-structured schedule was part of a routine process of obtaining the patient's medical history and an examination. The medical history included demographic, socio-economic, marital, reproductive, investigation and treatment history, a review of available medical records, examination of the mother and infant to determine the pregnancy outcome. Hence, the study was conducted based on implied consent.

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However, the purpose of the study was explained to the subjects and no difference was made between minor and adult subjects. Primary data was collected by interviewing the women or their guardians and by examination of the mothers and their newborns.

Detailed obstetric history was taken. Her general examination for Height, weight and BP and detailed obstetric examination was done. Her routine blood investigations like hemoglobin, urine examination, blood group were done. Special investigations were done as required e.g. Peripheral smear for typing of anemia. Anemia was defined as a hemoglobin level below 10 gm% in the last trimester of pregnancy, preterm delivery was defined as occurring within 37 weeks of gestation, and low birth weight was defined as babies weighing less than 2500 grams at birth.⁽¹¹⁾

RESULTS: The number of total confinements in the hospital during the 2years period was 1208, of which 292(24.17%) subjects were between 15-19 years old and 436(36.09%) subjects were between 20-24 years old. Of these, 232(79.45%) teenagers and 364 (83.49%) 20-24 year old women delivered in the study hospital and therefore were eligible to take part in the study comprising the study group and control group, respectively.

Thus, the referral rate was 20.55% and 16.51% in the study and control groups respectively; the difference was not significant. Teenage pregnancy comprised 24.17% of the total pregnancies that occurred in the hospital during the study period.

Both the groups had similar socioeconomic status. The majority were primipara - 90% and 82% in the study and control groups, respectively. As the number of second and third parous women was too small, separate analysis was not done for parity. All of them had started antenatal care from the hospital OPD late in the 1st trimester or early in the 2nd trimester and had 3 or more antenatal check-ups, as recommended under the RCH program. The quality of antenatal care delivered from the same institution was similar in the two groups.

No significant difference was observed between the two groups in respect to their health and nutritional status other than the parameters under study.

All the 232 teenagers had documented records for last menstrual period, as compared with 340 of the 364 women in the control group. Results of the hemoglobin estimation were known in 216 teenagers and 156 women in the control group. The prevalence of anemia [table 2] was significantly more ($P<0.05$) in the teenage group (62.96%) in comparison with the control group (43.59%).

Preterm delivery was seen to occur more commonly in the study group (54.35%) than in the control group (25.88%) and this difference was significant at $P<0.001$. The incidence of low birth weight was observed to be significantly higher ($P<0.0001$) among the teenage mothers (65.52%) than among the mothers in the control group (27.17%).

	Adolescent (n= 232)	Adult (n=340)	P value
Age(median)	19(16-19)	28(20-41)	<0.05
Gravida(median)	1(1-3)	2(1-9)	NS
Parity(median)	1(0-1)	1(0-5)	NS
Nulliparity(%)	88.2	41.1	<0.05
First prenatal visit (mean+-SD)	20.14+-12.84	14.99+-9.47	<0.05
Weight Gain(mean+_SD)	14.27+-5.85	14.63+-4.36	NS

Table 1

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	Married	Unmarried
Study group(adolescent)	97%	3%
Control group(Adults)	All married	00

Table 2: Marital status in the study group and control group

Unmarried patients are a neglected group and receive least care during labour, delivery and puerperium.

Though the prevalence of anemia was higher ($P < 0.05$) in the study group, severe anemia with hemoglobin levels below 8gms% were found only in the control group (table 3).

Hemoglobin Level	Study Group		Control group	
	No	percentage	No	percentage
7-7.9	00		8	5.13
8-8.9	20	9.26	12	7.69
9-9.9	116	53.7	48	30.77
>10	80	37.04	88	56.41
Total	216	100	156	100
Anemia	136	62.95	68	43.59

Table 3

Duration of pregnancy in weeks	Study Group		Control group	
	No	percentage	No	percentage
<32	24	10.35	8	2.35
32-34	40	17.24	16	4.71
34-37	62	26.76	64	18.82
38-40	86	37.04	148	43.52
40-42	4	1.72	68	20
>42	16	6.89	36	10.58
Total	232	100	340	100
Term delivery	96	41.36	216	63.53

Table 4: Distribution of subjects according to duration of pregnancy at confinement

The duration of gestation at which the delivery occurred could be assessed in 340 mothers of the 20-24 years age group, as the remaining 24mothers did not have documented records of their last menstrual period. Preterm delivery occurred more frequently ($P < 0.001$) among the teenage mothers. However, post-dated deliveries were slightly higher in the control group (10.59%) than in the study group (6.89%), though this was not significant. Yet, the number of term deliveries was significantly higher ($P < 0.005$) in the control group (table 4).

Table 5: Distribution of subjects according to weight of baby at confinement: The incidence of low birth weight was significantly higher ($P < 0.0001$) in babies born to teenage mothers than in those born to older women. Not a single newborn was found to be above 3kgs at birth in the study group,

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while none were below 1.5kgs in the control group. The average birth weight was 2.63kgs in the study group and 2.74kgs in the control group. This difference was strongly significant at $P < 0.0001$.

Birth weight of babies	Study Group		Control group	
	No	percentage	No	percentage
<1.5	12	5.17	8	2.46
1.5-1.9	4	1.75	16	4.93
2.0-2.4	136	58.62	74	22.83
2.5-3.0	80	34.48	158	48.76
>3.0	0	-	68	20.98
Total	232	100	324	100
Low birth weight	152	65.52	88	27.17

Table 5

	Live births	Macerated still births	Fresh still births	Neonatal deaths
Adolescents	95%	3%	2%	1%
Adults	98%	1%	1%	-

Table 6: Type of birth

The cause of still birth was severe preeclampsia or eclampsia. In few cases it was due to accidental hemorrhage. The neonatal death was due to prematurity due to birth asphyxia.

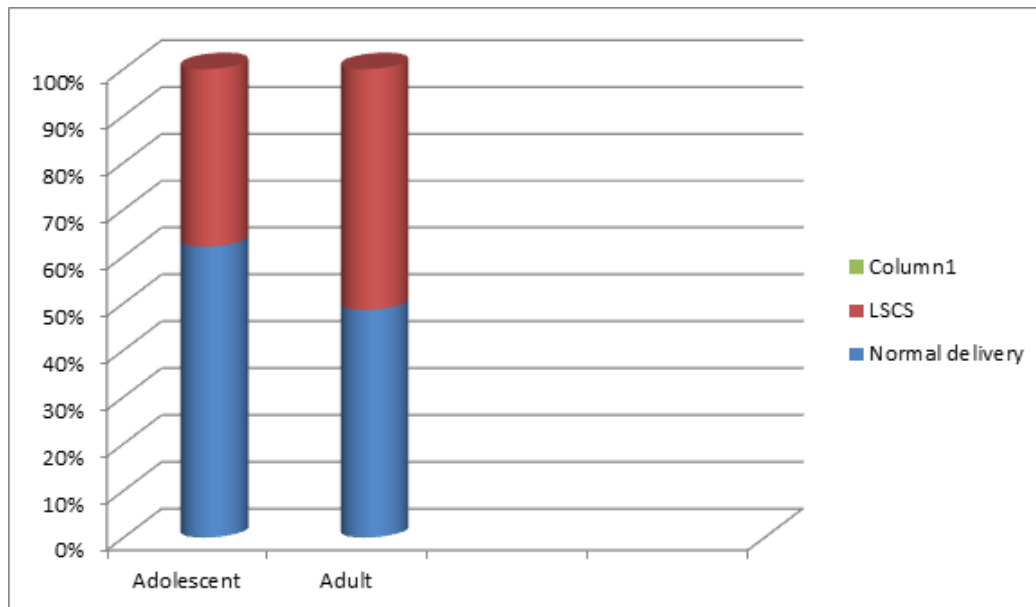


Chart 1: Distribution of subjects according to Percentage of LSCS and normal delivery

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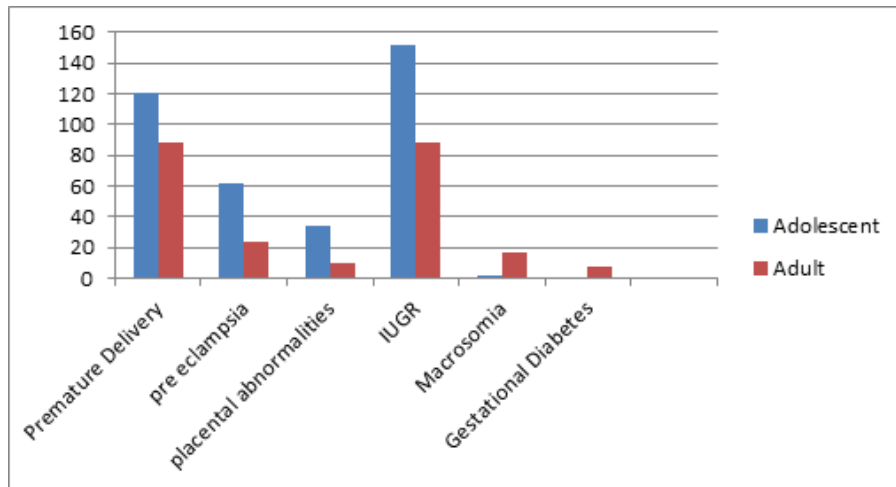
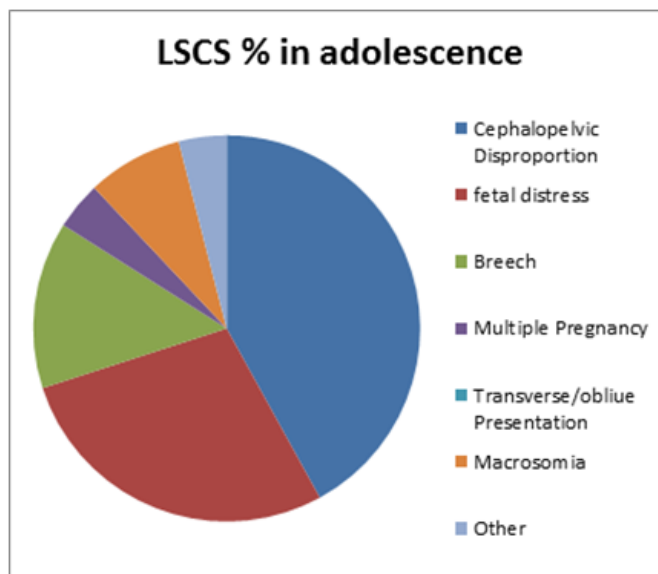
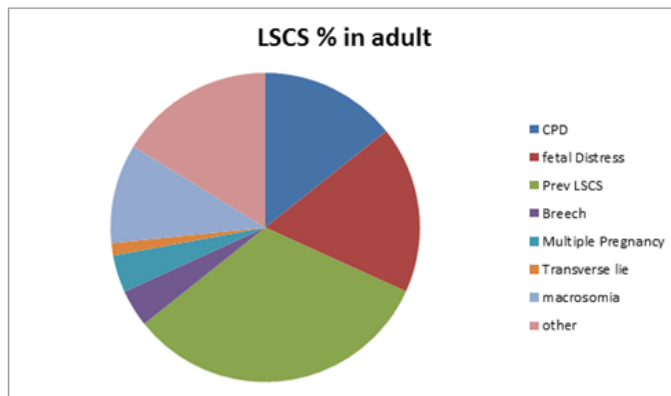


Chart 2: Distribution of complications in both groups



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DISCUSSION: Under the economic conditions prevailing in rural India, coupled with poor utilization of health services, the problem of adolescent motherhood is linked with child survival and maternal mortality and morbidity.⁽¹¹⁾

The age at marriage varies in different parts of India, according to different social customs and ethnic and religious groups. In rural areas, early marriage is perpetuated by traditional beliefs regarding preserving a girl's chastity and family needs to reduce expenditure.⁽¹²⁾ Teenage pregnancy is therefore coming up as one of the most important social and public health problems. The practice of family planning is still very limited in this group.

Most adolescent girls in rural areas being illiterate are not aware of family planning methods, and even if they are aware they do not have easy access to family planning services or fail to utilize them due to inhibitions or pressure to attain motherhood to satisfy their mothers-in-law or husbands.⁽¹⁾

Husbands and mothers-in-law are the primary decision-makers. In many cases, this decision making structure appears to be driven by a woman's lack of economic independence. Even access to the most effective services is highly dependent on the involvement of influential family members.⁽¹³⁻¹⁵⁾

In India, 10.3% of the female population belongs to the age group of 15-19 years.⁽¹⁶⁾ In 1997, the age specific fertility rate was found to be 52.5 live births per 1000 rural women aged between 15-19 years.⁽¹¹⁾ Over the years, there has not been much improvement in the country's scenario as reported by the National Family Health Surveys 1, 2, and 3 where the median age at first birth for women aged 25-49 years was observed to be 19.4, 19.3, and 19.8, respectively.⁽¹⁷⁾

The prevalence of teenage pregnancy in the study population was 24.17%, which lies within the range observed in India, which varies from 3% to 52%.^(4,16-18) Complications of pregnancy were observed to be more among adolescent mothers in community- as well as hospital-based studies. The incidence of still birth, preterm delivery, low birth weight, and complications during pregnancy and labor like toxemia of pregnancy, eclampsia, and cephalopelvic disproportion were more in teenagers.⁽¹⁹⁻²⁰⁾

Anemia is a common complication of teenage pregnancy.⁽²⁾ Chahande, et al. reported 72.6% of teenage pregnant women to be anemic.⁽¹⁹⁾ Osbourne, et al. observed a highly significant increase in the incidence of anemia ($P < 0.001$) in pregnant teenagers, 11.1% as compared with 5.2% in the 20-24 year old age group.⁽²¹⁾ In this study, the finding was similar, though the incidence, as a whole, was higher in both the groups than that observed by Osbourne.⁽²¹⁾ Other authors, however, failed to observe similarly.^(9,10,22,23)

A study conducted among mothers of various age groups showed that anemia was lower in teenage mothers (33%) in comparison with those who were 20-30 years old (62.1%) and those who were in the 31+ years old group (71%).⁽⁹⁾ Pachauri, too, found a lower incidence of anemia among teenagers than in the control group.⁽²²⁾ Ghosh observed little difference in the incidence of anemia between the younger and older teenagers.⁽¹⁰⁾ This may be due to widespread implementation of iron and folic acid supplementation program by ministry of health and family welfare amongst schools.⁽⁷⁾

Prematurity rates have been reported to be higher in teenage mothers than in the older group by many authors. Probable causes for the higher incidence of preterm labor may be anemia, malnutrition, pregnancy-induced hypertension or lack of antenatal care.^(9,10,23) Foreign authors also

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observed similarly.^(21,24) In this study, the incidence of preterm delivery among the teenage mothers (51.51%) was double that in the control group (25.82%). Preterm delivery in teenagers in this study was much higher than that reported by the other Indian authors, which varied from 13.7% to 31%.^(8,10,19,23)

The average birth weight was lower in the study group (2.36kgs) than in the control group (2.74kgs). The prevalence of low birth weight also was significantly higher in the study group. Some authors reported a higher incidence of low birth weight among babies born to teenage mothers.^(8,19) Horon, et al. found no significant difference in birth weights between the two groups.

He observed that factors known to vary with birth weight included socio-demographic and anthropometric characteristics of the mother, antepartum care, time of onset of labor, the length of gestation, and the sex of the infant. Maternal socio-demographic characteristics included race, marital status and hospital ward status. Gestational age was the most important variable in predicting birth weight.⁽²⁵⁾

If early marriages cannot be discouraged, as the situation still prevails in rural areas of India, three steps can be taken for prevention of complications of adolescent pregnancy through enhanced Family Welfare measures:

- Delay marriage as much as possible
- Delay the first pregnancy
- Delay subsequent pregnancies

It is encouraging to observe that the number of teenage marriages have shown a slight decrease in the country, as reported by the three National Family Health Surveys, where the percentage of women aged 20-24years old married by age 18 were 54.2, 50.0 and 44.5, respectively.⁽¹⁷⁾

CONCLUSION: This study highlights that nearly one fourth of pregnancies occur in teenage women, who have significantly higher rates of complications. This may cause retardation of growth and development, and also deprive them of their childhood and education with resultant deterioration of the overall health of the nation. The time has come to focus on this problem.

Education, nutritional support, family planning, along with creating awareness among the community and school girls about the importance of delaying marriage, reproductive health, family life. Population education will definitely help in transforming today's adolescent girls into healthy and responsible women, giving birth to a healthy future generation.

REFERENCES:

1. Pathak KB, Ram Adolescent motherhood: Problems and consequences. *J Fam Welfare*. 1993; 39: 17-23.
2. Programming for Adolescent Health and Development. WHO Technical Report Series. 1999; 886: 1-217.
3. Nitwe MT. Teenage pregnancy: A health hazard. *J Obstet Gynecol India*. 1989; 39: 303-6.
4. Bhaduria S. Teenage pregnancy: A retrospective study. *J Obstet Gynecol India*. 1991; 41: 454-6.
5. Kale KM. Socio-medical correlates of teenage pregnancy. *J Obstet Gynecol India*. 1996; 46: 180-4.

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6. Pal A, Gupta KB, Randhawa I. Adolescent pregnancy: A high-risk group. *J Ind Med Assoc.* 1997; 95: 127–8. [PubMed].
7. <http://nrhm.gov.in/nrhm-components/rmnch-a/adolescent-health/weekly-iron-folic-acid-supplementation-wifs/background.html> : Ministry of health and Family Welfare. Government of India; Reproductive and Child Health Programme Phase II, Programme Implementation Plan.
8. Sarkar CS, Giri AK, Sarkar B. Outcome of teenage pregnancy and labour: A retrospective study. *J Ind Med Assoc.* 1991; 89: 197–9. [PubMed].
9. Biswas A, Goswami TK. Obstetrical behaviour and perinatal mortality of teenage mothers in urban population. *J Obstet Gynecol India.* 1983; 33: 42–5.
10. Ghose N, Ghosh B. Obstetric behaviour in teenagers: A study of 1138 consecutive cases. *J Obstet Gynecol India.* 1976; 26: 722–6. [PubMed].
11. Park K. *Park's Textbook of Preventive and Social Medicine.* 19th ed. Jabalpur, India: M/s Banarsidas Bhanot Publishers; 2007.
12. Atwood SJ, Hussain J. Adolescent motherhood: Priorities and next steps. *J Fam Welfare.* 1997; 43: 8–14.
13. Banerjee B. Comments to: Induced abortion and traumatic stress: A preliminary comparison of American and Russian women, published in *Medical Science Monitor, USA*, Aug 2004. *Med Sci Monit.* 2007; 13: LE11–2. [PubMed].
14. Rue VM, Coleman PK, Rue JJ, Reardon DC. Induced abortion and traumatic stress: A preliminary comparison of American and Russian women. *Med sci Monit.* 2004; 10: SR5–16. [PubMed].
15. Elul B, Bracken H, Verma S, Ved R, Singhi R, Lockwood K. Unwanted pregnancy and induced abortion in Rajasthan, India: A qualitative exploration. Population Council. Available from: <http://www.popcouncil.org/pdfs/SARreport.pdf> [last accessed on 2007 Jul 3]
16. Sen S. Status of adolescents: glimpses from states of India. *Health for the Millions.* 2004; 29: 31–2.
17. National Family Health Surveys India. Key findings from NFHS-3 International Institute for Population Sciences Mumbai India. Available from: <http://www.nfhsindia.org/factsheet.html>. [last accessed on 2008 March 15].
18. Thekkekkara T, Veenu J. Factors associated with teenage pregnancy. *Indian J Community Med.* 2006; 31: 83.
19. Chahande MS, Jadhao AR, Wadhwa SK, Ughade S. Study Of Some Epidemiological Factors In Teenage Pregnancy - Hospital Based Case Comparison Study. *Indian J Community Med.* 2002; 27: 3.
20. Sharma AK, Chhabra P, Gupta P, Aggarwal OP, Lyngdoh T. Pregnancy in adolescents: A community based study. *Indian J Prev Soc Med.* 2003; 34: 24–32.
21. Osbourne GK, Howat RC, Jordan MM. The obstetric outcome of teenage pregnancy. *Br J Obstet Gynaecol.* 1981; 88: 215–21. [PubMed].
22. Pachauri S, Jamshedji A. Risks of teenage pregnancy. *Obstet Gynecol.* 1960; 33: 477–82.
23. Sen SP. Pregnancy in adolescence. *J Obstet Gynecol India.* 1974; 24: 93–6.
24. Poliakoff SR. Pregnancy in the Young Primigravida. *Am J Obstet Gynecol.* 1958; 76: 746–53. [PubMed].
25. Horon IL, Strobino DM, MacDonald HM. Birth weight among infants born to adolescent and young adult women. *Am J Obstet Gynecol.* 1983; 146: 444–9. [PubMed].

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