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"Pregnancy in Adolescents: A Study at a Tertiary Care Hospital in Western Rajasthan"

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Abstract *:- (WHO)[1,2] defines "any pregnancy from a girl who is 10-19 years of age", the age being defined as her age at the time the baby is born. They are grouped as younger adolescents when aged 10-14 years and adolescents as aged 15-19 years. Often the terms "Teenage pregnancy" and "Adolescent pregnancy" are used as synonyms.*

Aim Of The Study:

1. To find the prevalence of adolescent pregnancy.
2. To analyse the factors contributing to adolescent pregnancy.
3. To study and compare the health problems of adolescent mothers during antepartum, intrapartum and postpartum period with adult mothers.
4. To study and compare the fetal consequences of adolescent pregnancy with adult pregnant women.
5. To study maternal and neonatal mortality.

Study done at Umaid Hospital, Dr S. N. Medical College, Jodhpur from July 2016 to December 2016.

Result And Conclusion:- *Adolescent pregnancy is a worldwide problem bearing serious social and medical implications relating to maternal and child health. India is fast approaching to be the most populous country in the world, and adolescent pregnancy is likely to aggravate the problem. While there is a growing realization of the need to promote adolescent reproductive health, work done in this field is often inadequate. Efforts need to be directed not only to improve the reproductive outcome but also decrease the incidence of adolescent pregnancy by increasing public awareness, ensuring female education and enforcing marriage law.*

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I. Introduction :-

"No longer a child, not yet a women", is a line which captures the essence of adolescence beautifully.

Pregnancy and childbirth are universally celebrated events. Maternal age has been indicated to be an important factor in determination of obstetric outcome. The term Adolescence is derived from the Latin term "adolescere" which means "to grow up" .World Health Organization (WHO)[1,2] defines adolescent pregnancy as "any pregnancy from a girl who is 10-19 years of age", the age being defined as her age at the time the baby is born. They are grouped as younger adolescents when aged 10-14 years and adolescents as aged 15-19 years. Often the terms "Teenage pregnancy" and "Adolescent pregnancy" are used as synonyms.

Adolescence is a distinct and unique physical and developmental stage in a woman's life. Consequently, the diagnosis and management of pregnancy during this time, before the age of 20, deserves acknowledgement of its distinctive inherent risks and an understanding of the relevant elements of care required for successful outcomes for the mother, the infant, and their surrounding social circle. This is the period when structural, functional, mental and psychosocial developments occur in a child to prepare her for assuming the responsibility of motherhood.

Globally an estimated 16 million girls between the ages of 15 and 19 yrs. and 2 million girls under the age of 15 give birth every year. Almost all adolescent births- about 95%- occur in low and middle income countries. This number represents 11% of all births worldwide (WHO 2014) .Seven countries account for half of all adolescent births: India, Bangladesh, Brazil, the Democratic Republic of the Congo, Ethiopia, Nigeria and the United States of America[3]. Within countries, adolescent births are more likely to occur among poor, less educated and rural populations.

Adolescent pregnancy is common in India as well as in many south Asian countries since adolescent marriage is a social reality and there is a social expectation to have a child soon after marriage[4,5,6,7]. Many researches show that the ill consequences of adolescent pregnancy are due to marriage in early ages[8] and adverse social and economic conditions of women[9-18]. Biologically, a teenage pregnant woman, still growing, has to compete with the foetus for nutrients and hence, pregnancy within two years after menarche increases the risk of preterm delivery[19].

Data of the **National Family Health Survey (NFHS)-3** revealed that 16% of women, aged 15-19 years, have already started childbearing in India. This proportion is highest in the state of Jharkhand (28%), followed by West Bengal (25%) and Bihar (25%), all located in eastern India. Early marriage sometimes means teenage pregnancy, particularly in rural regions where the rate of teenage pregnancy is much higher that is 21.21 %[9] than it is in urbanized areas[20] .

The Centre for Development and Population Activities (CEDPA, 2001) states that there are an estimated 105 million adolescent girls in the age group 10-19 years in India. In India, early marriage for girls receives religion and social sanction. There is strong cultural pressure on parents to marry their daughters early. Thus, there are over 10 million pregnant adolescents agers and teenage mothers in India, with one in six girls in age group 13-19 years beginning child bearing. But these girls are prepared neither physically nor emotionally for pregnancy and motherhood. Teenagers who marry between age 15-19 years will nonetheless bear on average 6-7 children over the course of their lives.**[21]**

In fact, in-spite of Child Marriage Restraint Act 1978, a substantial proportion of rural marriages in India continue to take place when the girl is around 15 years. Early marriage coupled with an ingrained tradition to bear a child within 1-2 years of marriage to be accepted by the in-laws puts undue pressure on the married teenage girl to bear a child.

Teenage mothers are nearly 3 times more at risk of developing anemia and preterm labour[22]. They are twice as likely to develop hypertensive problems in pregnancy and are twice risk for low birth weight. Teenage pregnant girls need more attention for prevention and treatment of anemia, preeclampsia, eclampsia and low birthweight, prematurity[23]

The WHO estimates that the risk of death following pregnancy is twice for women between 15 and 19 years than for those between the ages of 20 and 24 years. The maternal mortality rate can be up to five times higher for girls aged between 10 and 14 years than for women above twenty years of age. Fourteen percent of all unsafe abortions in low and middle income countries are among women aged 15-19 years. About 2.5 million teenagers have unsafe abortions every year, and teenagers are more seriously affected by complications than are adult women[24]

Adolescent pregnancy is a social burden and reflects the country's attitude towards literacy and position of women in the society, traditional culture of early marriage, sex education, knowledge and use of contraception, accessibility of women to various health care facilities, services and affordable contraception options.

The higher rates of adolescent pregnancy tend to be concentrated in rural areas and are linked to poverty. Multiple socioeconomic risk factors have been thought to be responsible as- age at marriage, poor transition from school to work at 16 years of age, lower socioeconomic group, illiteracy,sexual abuse, low educational achievement, mental health problems, having had teenage parents, crime, out of wedlock pregnancy, social deprivation, being in the care of social services, lack of awareness and maturity.

II. Aims &Objectives Of Study

AIM OF THE STUDY:

6. To find the prevalence of adolescent pregnancy.
7. To analyse the factors contributing to adolescent pregnancy.
8. To study and compare the health problems of adolescent mothers during antepartum, intrapartum and postpartum period with adult mothers.
9. To study and compare the fetal consequences of adolescent pregnancy with adult pregnant women.
10. To study maternal and neonatal mortality.

OBJECTIVES OF THE STUDY:

1. To explore strategies for prevention of problems of adolescent pregnancies.
2. To explore strategies for prevention of perinatal and maternal mortality in adolescents.

III. Materials And Methods

Study design

The study undertaken was a comparative study of pregnancies and their outcome in adolescent and adult mothers .

Study place

Umaid Hospital, Dr S. N. Medical College, Jodhpur.

Study population

Adolescent pregnant women (cases) - (15-19yrs)
Adult primigravidae (control) - (20-24yrs).

INCLUSION CRITERIA:

All adolescent primigravidae and adult primigravidae attending labour room of Umaid Hospital and willing to participate were included in the study.

EXCLUSION CRITERIA:

Women with preexisting medical disorders like:
congenital and rheumatic heart disease
chronic hypertension
overt diabetes mellitus
hypothyroidism
Primigravidas undergoing abortions
Multigravidae
Multiple gestation

Study procedure

A structured proforma was used to collect information for all women in this study. For each case, next consecutive singleton delivery in the age group of 20-24 years was selected for comparison.
Information regarding age, educational status, occupation, marital status, age at marriage, health awareness, knowledge about pregnancy and delivery, antenatal visits was obtained from history.
A detailed history, general physical examination and appropriate routine investigations were carried out for all women.
Complications during antenatal, intranatal and postpartum period were also noted. Details regarding mode of delivery and outcome was noted.
Both mother and infant were followed up till their discharge.

Statistical Analysis:-

Data was compiled and analyzed using the Epi Info software. Statistical tests were Chi square and Students t-test and the p value of <0.05 was considered significant.

Ethical Considerations:-

An ethical approval was obtained from Institutional Ethics Committee of Dr. S.N. Medical College, Jodhpur. Informed consent was obtained from the study participants. Participants were given a full right to continue or withdraw from the study.

IV. Observations & Results

Table 1: Incidence of adolescent pregnancy

Total No. of deliveries	10727
Adolescent deliveries	516
Incidence	4.81%

Table 1 shows that there were a total of 516 adolescent pregnant women admitted to the labour room during the study period constituting 4.81% of total admissions. Of these 350 met the inclusion criteria and were taken as the study group. For each case next consecuvite singleton pregnancy in the age group of 20-24 years was selected for comparison.

TABLE 2: Distribution of cases according to Age

Age (in years)	Teenage mothers		Age (in years)	Adult mothers	
	No. of cases	Percentage		No. of cases	Percentage
15-16	1	0.29	20-21	182	52
17-18	125	35.71	22-23	133	38
19	224	64	24	35	10
Total	350	100	Total	350	100

Age	Adolescent mothers	Adult mothers
Mean	18.59	21.46
SD	0.59	1.35

Table 2 shows maximum number of adolescent mothers belonged to the age group of 17-19 years 349 (99.71%). There were no adolescent mothers aged less than 15 years. Their Mean±SD age was 18.59±0.59 years. The maximum number of adult mothers belonged to the groups of 20-21 years 182 (52%) and only 35(10%) belonged to the age group of 24 years. Their mean±age was 21.46±1.35 years.

TABLE 3: Distribution of cases according to socioeconomic status

Socioeconomic status	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Upper	14	4.00	36	10.29
Middle	108	30.86	196	56.00
Lower	228	65.14	118	33.71
Total	350	100.00	350	100.00

p value <0.0001

Table 3 Reveals distribution of cases according to their socioeconomic status. In adolescent mothers more cases 228 (65.14%) were related to lower socioeconomic status than adult mothers 118 (33.71%). This can be risk factor in adolescent pregnancy for increased perinatal and maternal mortality and morbidity. This difference is statistically significant. p value(0.0001)

TABLE 4: Distribution of cases according to Locality

Locality	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Rural	227	64.86	188	53.71
Urban	123	35.14	162	46.29
Total	350	100.00	350	100.00

p value 0.003

Table 4 shows that majority of cases in adolescent women group were from rural area 227(64.86%). In adult mothers there were an almost equal distribution of cases between the rural 188(53.71%) and urban area (46.29%). p value (0.003) is statistically significant.

TABLE 5: Distribution of cases according to literacy level

Education	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Illiterate	218	62.29	123	35.14
Primary Level	112	32	146	41.71
Secondary level	20	5.71	56	16
Graduation	0	0	25	7.14
Total	350	100	350	100

p value <0.0001

Table 5 shows that majority of cases of adolescent mothers were illiterate 218(62.29%) as compared to adult mothers in which 123(35.14%) were illiterate. Illiteracy was significantly associated with adolescent pregnancy. This affects reproductive and sexual health awareness and thus, quality of life. Statistically (0.0001) it was highly significant.

TABLE 6 : Distribution of cases according to registration status

Registration status	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Unbooked	189	54.00	155	44.29
Booked	161	46.00	195	55.71

Total	350	100.00	350	100.00

p value 0.012

Table 6 shows majority of adolescent women were unbooked 189(54%) as compared to adult mothers 155(44.29%). This indicates adolescent mothers were less careful about their pregnancy because of the lack of awareness and maturity. Their p value (0.012) is statistically highly significant.

TABLE 7 : Distribution of cases according to knowledge of contraception

Knowledge of Contraception	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Present	41	11.71	263	75.14
Absent	309	88.29	87	24.86
Total	350	100.00	350	100.00

p value <0.0001

Table 7 shows that majority of adolescent women 309(88.29%) were unaware of contraception as compared to adult mothers in whom 87(24.86%) were unaware of contraception. As a result considerable numbers of adolescent women had unplanned and undesired pregnancies. P value (0.0001) is statistically significant.

TABLE 8: Distribution of cases according to use of contraception

Use of contraception	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Not using	329	94.00	100	28.57
Condom	16	4.57	159	45.43
Pill	5	1.43	56	16.00
IUCD	0	0.00	21	6.00
Rhythm	0	0.00	14	4.00
Total	350	100	350	100

p value <0.0001

Table 8 shows that 21(6.0%) of adolescent mothers had used contraception whereas in adult mothers 250(71.43%) has used contraception. The difference is statistically highly significant (0.0001) and this is mainly due to low female literacy level in adolescents and gender imbalance.

TABLE : 9 Distribution of cases according to incidence of anemia

Anemia	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Present	219	62.57	203	58.00
Absent	131	37.43	147	42.00
Total	350	100.00	350	100.00

p value 0.246

Table 9 shows that majority of the women in both groups were anemic (Hb<11gm/dl) but the proportion was higher among adolescent mothers 219(62.57%) as compared to adult mothers 203(58%). This may reflect the general state of nutritional deficiency in our women, with higher incidence in low socioeconomic status.

TABLE 10 : Distribution of cases according to period of gestation

Period of Gestation	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Full term	299	85.43	325	92.86
Pre-term	51	14.57	25	7.14
Total	350	100.00	350	100.00

p value 0.002

Table 10 shows that adolescent women had a higher proportion 51(14.57%) of preterm deliveries as compared to the adult mothers 25(7.14%). The association between the maternal age at conception and period of gestation during delivery was statistically (0.002) significant.

TABLE 11 : Distribution of cases according to mode of delivery

Mode of delivery	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Vaginal Delivery	263	75.14	272	77.71
LSCS	86	24.57	78	22.29
Operative vaginal del.	1	0.29	0	0.00
Total	350	100	350	100

p value 0.518

Table 11 shows that vaginal delivery was the commonest mode of delivery in both group 263(75.14%) in adolescent mothers and 272(77.71%) in adult mothers. In adolescent mothers, LSCS was done in 86(24.57%) and only single case underwent OVD 1(0.29%). Maternal age was not related to mode of delivery in our study. p value is not significant.

TABLE 12: Distribution of cases according to indication of LSCS

Indication of LSCS	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
FD	31	36.05	39	50.00
CPD	13	15.12	7	8.97
Primary Breech	11	12.79	4	5.13
NPOL	11	12.79	11	14.10
APE	8	9.30	2	2.56
Failed Induction	6	6.98	7	8.97
DTA	4	4.65	5	6.41
APH	2	2.33	3	3.85
Total	86	100.00	78	100.00

p value 0.003

Table 12 On comparing the indication of LSCS, it was found that fetal distress was the commonest indication in both the groups, in adolescent mothers 31(36.05%) and in adult mothers 39(50%) respectively. Second most common indication in adolescent mothers was CPD 13(15.12%) whereas in adult mothers was non progress of labour 11(14.10%). The increased association of CPD in adolescent mothers could be related to immaturity of pelvis. Malpresentations in the form of primary breech and incidence of APE was higher in adolescent mothers 11(12.79%) and 8(9.30%) respectively as compared to adult mothers 4(5.13%) and 2(2.56%) respectively.

TABLE 13 : Distribution of cases according to birth weight of babies

Birth weight(kg)	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
<2.5	118	33.71	92	26.29
2.5-3	161	46.00	188	53.71
>3	71	20.29	70	20.00
Total	350	100.00	350	100.00
Mean±SD	2.56±0.61		2.67±0.54	
p value	0.016			

P value- 0.016

Table 13 shows higher proportion 118(33.71%) of low birth weight in adolescent mothers as compared to adult mothers in which 92(26.29%) were of low birth weight. The difference is statistically (0.016) significant.

TABLE 14: Distribution of cases according to APGAR score at 1 min.

APGAR score	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
<5	56	17.3	32	9.4
5-7	98	30.2	86	25.3
>7	170	52.5	222	65.3
Total	324	100.0	340	100.00

TABLE 15: Distribution of cases according to neonatal complications

Neonatal Complications	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
LBW	118	33.71	92	26.29
NICU	86	24.57	70	20.00
Prematurity	51	14.57	25	7.14
MAS	41	11.71	50	14.29
Birth Asphyxia	21	6.00	18	5.14
Neonatal jaundice	14	4.00	10	2.86
Neonatal Sepsis	4	1.14	3	0.86
Congenital Anomalies	2	0.57	3	0.86

p value= 0.265

Table 15 shows majority of babies born to adolescent mothers were LBW 118(33.71%), 86(24.57%) admitted to NICU, 51(14.57%) were premature, 41(11.71%) had MAS and 14(4%) had neonatal jaundice as compared to babies born to adult mothers where 92(26.29%) were LBW 70(20%) admitted to NICU 25(7.14%) were premature, 50(14.29%) had MAS and 10(2.86%) had neonatal jaundice. This shows that higher proportion of neonatal morbidity were present in adolescent mothers as compared to adult mothers, which can be attributed to malnutrition, lack of awareness about antenatal care services and illiteracy.

TABLE 16: Distribution of cases according to antepartum complications

Antepartum Complications	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Severe Anemia	29	8.29	19	5.43
GHT	13	3.71	8	2.29
Pre eclampsia	11	3.14	7	2.00
Eclampsia	10	2.86	4	1.14
APH	2	0.57	3	0.86

P value- 0.812

Table 16 shows that antepartum complications were much higher in adolescent mothers as compared to adult mothers. In adolescent mothers 29(8.29%) had s. anemia, 13(3.71%) had GHT, 11(3.14%) were preeclamptic and 10(2.86%) were eclamptic, 2(0.57%) had APH where as in adult mothers 19(5.43%) had s.anemia 8(2.29%) had GHT 7(2%) were pre-eclamptic, 4(1.14%) were eclamptic, 3(0.86%) had APH.

TABLE 17: Distribution of cases according to post partum complications

Post Partum Complications	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
PPH	16	4.58	12	3.43
Cervical Tear	8	2.29	4	1.14
Vulval Hematoma	6	1.71	3	0.86
Retained Placenta	3	0.86	2	0.57

P Value-0.927

Table 17 shows that postpartum complications were more in adolescent mothers as compared to adult mothers. PPH was seen in16(4.58%), 8(2.29%) had cervical tear, 6(1.71)% had vulval hematoma and 3(0.86%)

had retained placenta in adolescent mothers where as in adults mothers 12(3.43%) had PPH, 4(1.14%) had cervical tear, 3(0.86%) had vulval hematoma and 2(0.57%) had retained placenta.

TABLE 18: Distribution of cases according to perinatal mortality

Perinatal Mortality	Adolescent mothers		Adult mothers	
	No. of cases	Percentage	No. of cases	Percentage
Early neonatal death	20	5.71	11	3.14
IUD	12	3.43	7	2.00
SB	14	4.00	3	0.86

p value= 0.386

Table 18 reveals that early neaonatal death were 20(5.71%) in adolescent mothers whereas 11(3.14%) in adult mothers. There were 12(3.43)% IUD in adolescent mothers whereas 7(2.00%) in adult mothers. There were 3(0.86%) still births in both the groups. It is statistically insignificant.

TABLE 19 : Effect of antenatal care (Booking) on various complications in Adolescent pregnancy

Complications	Booked (n=161)		Unbooked (n=189)		p value
	No. of cases	Percentage	No. of cases	Percentage	
Anemia	105	65.22	114	60.32	0.376
HT	18	11.18	17	8.99	0.592
Preterm	20	12.42	31	16.40	0.362
LBW	47	29.19	70	37.04	0.139
IUD	2	1.24	10	5.29	**0.042**
SB	1	0.62	0	0.00	0.46
APH	0	0.00	2	1.06	0.501
PPH	7	4.35	6	3.17	0.584

Table 19 reveals that most of the complications occurred in unbooked cases where as booked cases had their pregnancy outcome relatively uneventuful emphasizing the importance of antenatal care.

TABLE 20 : Comparison between adolescent mothers and adult mothers in booked registration

Complications	Adolescent mother (n=161)		Adult mothers (n=195)		p value
	No. of cases	Percentage	No. of cases	Percentage	
Anemia	105	65.22	108	55.38	0.065
HT	18	11.18	6	3.08	0.002
Preterm	20	12.42	12	6.15	0.042
LBW	47	29.19	50	25.64	0.474
IUD	2	1.24	3	1.54	1.000
SB	1	0.62	1	0.51	1.000
APH	0	0.00	2	1.03	0.503
PPH	7	4.35	4	2.05	0.234

Table 20 shows comparison of booked adolescent mothers with booked adult mothers. Foetal and maternal outcome in both groups were comparable. This indicates the impact of ANC on both groups.

V. Discussion :-

"Too old for toys, too young for motherhood". Adolescence is basically a time for growing up and the child is not physically and emotionally mature enough to reproduce. Hence, if the girl is taken out of school at this time and pressurized into marriage, it can cause considerable emotional stress. These young girls, having little or no knowledge of contraception, usually become pregnant soon after marriage which further aggravates the physical and psychological stress.

Pregnancy in adolescence is associated with various complications both in mother and fetus. If one could identify the factors related to these complications, it would have important implication to successfully promote the healthy development of our future generation.

Adolescent pregnancy tends to be more common in the lower socio economic group that is responsible for increased obstetric hazards to both mother and fetus. More over pregnancy and delivery in adolescent mothers are at higher risk due to poor antenatal care, lack of health education, religious taboos of child marriage and against use of family planning methods. These accounts for increased incidence of adolescent pregnancy which is further complicated by poor socioeconomic status, illiteracy, unhygienic living standards, home confinements and lack of transportation in far flung areas.

Current study was undertaken in order to compare the fetomaternal outcome in adolescent and adult mothers, in the Department of Obstetrics and Gynaecology, Dr. S.N. Medical College and Associated group of Hospitals, Jodhpur which provides health care services to a population of western Rajasthan, with over 22000 deliveries annually. The study cohort comprised of 350 adolescent mothers and equal number of adult mothers who were admitted in the labour room of our hospital. The purpose of the study was to evaluate the complications during pregnancy and labour in adolescent mothers and to suggest preventive and social measures to reduce maternal and perinatal morbidity and mortality in adolescent mothers.

Table- Review of Literature showing incidence of Anaemia and Hypertension in adolescent and adult mothers

Study	Anaemia		Hypertension	
	Adolescent	Adult	Adolescent	Adult
Present study	62.57%	58%	9.71%	5.43%
Shravage JC[53]	84.2%	34.2%	37%	25%
Verma V[52]	35%	25%	18.8%	7.1%
Mehreen Mehdi Naqvi[51]	30%	18%	-	-
Pal Amitha et al[56]	27.5%	11.2%	15%	8.7%
Bhalerao AR et al[23]	25.5%	-	10%	-

Table: Review of literature showing incidence of preterm deliveries

Study	Adolescent	Adult
Present study	14.57%	7.14%
Indranil Dutta et al[48]	68.75%	33.75%
Shravage JC[53]	28.5%	24.2%
Goonewardena et al[16]	19%	11%
Pun KD[61]	7.1%	11.5%
Srestha S[14]	3%	1%

VI. Conclusion :-

Adolescent pregnancy is a worldwide problem bearing serious social and medical implications relating to maternal and child health. India is fast approaching to be the most populous country in the world, and adolescent pregnancy is likely to aggravate the problem. While there is a growing realization of the need to promote adolescent reproductive health, work done in this field is often inadequate. Efforts need to be directed not only to improve the reproductive outcome but also decrease the incidence of adolescent pregnancy by increasing public awareness, ensuring female education and enforcing marriage law. In the present study following conclusions were made.

- Adolescent pregnant women constituted 4.81% of all the pregnant women admitted to labour room of our hospital.
- Maximum number of adolescent mothers belonged to the age group of 17-19 years 349(99.71%). There were no adolescent mothers aged less than 15 years. Their Mean±SD age was 18.59±0.59 years. The maximum number of adult mothers belonged to the age group of 20-21 years 182(52%) and only 35(10%) belonged to the age group of 24 years. Their mean±age was 21.46±1.35 years
- In adolescent mothers majority of cases 228(65.14%) belonged to lower socioeconomic status than adult mothers 118(33.71%).This difference is statistically highly significant. This can be risk factor in adolescent pregnancy for increased perinatal and maternal mortality and morbidity in adolescent mothers.
- Majority of cases in adolescent women group were from rural area 227(64.86%). In adult mothers there were an almost equal distribution of cases between the rural 188(53.71%) and urban area 162(46.29%). The difference is statistically significant.
- In both groups maximum mothers belonged to Hindu religion 288(82.29%) vs 305(87.14%) and this difference was statistically non significant indicating the predominance of Hindu population in our region.
- Maximum number of adolescent mothers were illiterate 218(62.29%) as compared to adult mothers in which 123(35.14%) were illiterate. Illiteracy was significantly associated with adolescent pregnancy. This affects reproductive and sexual health awareness and thus, quality of life.
- In our study most of the adolescent women were unbooked 189(54%) as compared to adult mothers in which 155(44.29%). This difference is statistically significant. This indicates adolescent mothers were less careful about their pregnancy because of the lack of awareness and maturity.
- Contraceptive awareness was very low in adolescents 41(11.71%) as compared to adult mothers 263(75.14%). This difference is statistically highly significant. As a result considerable number of adolescent women had unplanned and undesired pregnancies.
- Twenty one (6.0%) of adolescent mothers had used contraception whereas in adult mothers 250(71.43%) has used contraception. The difference is statistically highly significant(0.0001) and this is mainly due to low female literacy level in adolescents and gender imbalance.
- Majority of the women in both groups were anemic but the proportion was higher among adolescent mothers 219(62.57%) as compared to adult mothers 203(58%) reflecting the general state of nutritional deficiency in our women with higher incidence in low socioeconomic status.
- Adolescent women had a higher proportion 51(14.57%) of preterm deliveries as compared to the adult mothers 25(7.14%).
- Vaginal delivery was the commonest mode of delivery in both group, 263(75.14%) in adolescent mothers and 272(77.71%) in adult mothers. In adolescent mothers, LSCS was done in 86(24.57%)and forceps was applied in only one case (0.29).
- Fetal distress was the major indications for caesarean section in both the adolescent and adult mothers 31(36.05%) & 39(50%) respectively followed by CPD, malpresentations and APE in adolescent mothers 13(15.12%), 11(12.79%) and 8(9.30%) respectively and NPOL 11(14.10%) in adult mothers.
- Higher proportion 118(33.71%) of babies born to adolescent mothers were low birth weight as compared to adult mothers 92(26.29%).
- Most of the new borns 170(52.5%) and 175(54%) had normal APGAR score at 1 and 5 minutes in adolescents but the incidence was low as compared to adult mothers 222(65.3%) and 232(68.3%) respectively. The incidence of neonatal asphyxia (APGAR score 0-5) was high in adolescents as compared to adult mothers at 1and 5 minutes 56(17.3%), 60(18.5%) vs 32(9.4%), 30(8.8%) respectively.
- Of the neonatal complications the incidence of LBW 118(33.71%) NICU admission 86(24.57%), prematurity 51(14.57%) and birth asphyxia 21(6%) was more in adolescent mothers as compared to adult mothers LBW 92(26.29%) NICU admission 70(20%), prematurity 25(7.14%) and birth asphyxia 18(5.14%).
- Antepartum complications were much higher in adolescent mothers as compared to adult mothers. In adolescent mothers 29(8.29%) had s.anemia, 13(3.71%) had GHT, 11(3.14%) were preeclamptic and 10(2.86%) were eclamptic, 2(0.57%) had APH where as in adult mothers 19(5.43%) had s.anemia 8(2.29%) had GHT 7(2%) were pre-eclamptic, 4(1.14%) were eclamptic, 3(0.86%) had APH.
- PPH was seen in 16(4.58%), 8(2.29%) had cervical tear, 6(1.71)% had vulval hematoma and 3(0.86%) had retained placenta in adolescent mothers where as in adults mothers 12(3.43%) had PPH, 4(1.14%) had cervical tear, 3(0.86%) had vulval hematoma and 2(0.57%) had retained placenta.
- The incidence of perinatal mortality was in higher proportion in adolescent mothers as compared to adult mothers. Early neonatal deaths, IUD, still births in adolescent and adult mothers were 20(5.71%) vs 11(3.14%), 12(3.43%) vs 7(2.00%) and 14(4%) vs 3(0.86%) respectively
- Most of the complications occurred in unbooked cases where as booked cases had their pregnancy outcome relatively uneventful emphasizing the importance of antenatal care.

- Foetal and maternal outcome in both booked groups were comparable. This indicates the impact of ANC on both groups.

Adolescent pregnancy is a complex problem affecting families, health care professionals, educators, government officials and the youth themselves. Though there is a declining rate in the majority of industrialized world, adolescent pregnancy is still a rampant and important public health problem in India, with unfavourable maternal and perinatal outcome.

This problem should be tackled on a priority basis with some evidence based prevention programme. Majors should be taken to improve female literacy, poverty and position of women in the society.

Stronger effort should be directed towards strict enforcement of laws prohibiting teenage marriages in India. To overcome traditional culture of early marriages in the country.

Youth friendly contraceptive and reproductive health services should be made accessible, affordable and readily available.

Good support from parents and other trusted adults can play an important role in helping teens make healthy choices about relationships, sex and birth control.

Good antenatal, intranatal and postnatal services, good neonatal services along with all the above suggested measures can all together minimize the various risks associated with teen pregnancy to a large extent.

With all these measures in place we can hope for a significant decline in teen pregnancy rates and the associated complications in India and also globally.

The limitation of present study could be that it is a hospital based study and therefore may not reflect the actual situation in the community as still there are a significant number of home deliveries in our country which remain unreported.

Bibliography

[1]. World Health Organization, United Nations Population Fund: Married adolescents: no place of safety. Geneva: WHO-UNFPA; 2006.
[2]. Adolescent pregnancy- Issues in adolescent health and development, WHO discussion papers on adolescence. WHO, 2004 Pg 86.
[3]. WHO (2014). Maternal, newborn, child and adolescent health: Adolescent pregnancy. Available from http:// www.who.int/ maternal child_adolescent/ topics /maternal/ adolescent pregnancy/en/.
[4]. Adhikari R. (2003) "Early marriage and childbearing: risks and consequences" World Health Organization, Geneva.
[5]. Barbara M. (2003) "Trends in the timing of first marriage" Paper presented at the WHO/UNFPA/Population Council Technical Consultation on Married Adolescents, WHO, Geneva, 9–12 December.
[6]. Stone N., Ingham R., Simkhada P. (2003) "Knowledge of sexual health issues among unmarried young people in Nepal" Asia-Pacific Population Journal. 18: 33-54.
[7]. Mathur S., Mehta M., Malhotra A. (2004) "Youth reproductive health in Nepal: Is participation the answer?" Engender Health, New York.
[8]. PRB (2000) "The World's youth 2000. Population Reference Bureau, Washington DC.
[9]. Weerasekera D. (1997) "Adolescent pregnancies-is the outcome different?" Ceylon Medical Journal. 42:16-17.
[10]. Khandait D., Ambadekar N., Zodpey S., Vasudeo N. (2000) "Maternal age as a risk factor for stillbirth" Indian Journal of Public Health. 44: 28-30.
[11]. Sharma A., Verma K., Khatri S. Kannan A. (2001) "Pregnancy in adolescents: a study of risks and outcome in Eastern Nepal" Indian Pediatrics. 38: 1405-9.
[12]. Ganatra B. and Hirve S. (2002) "Induced abortions among adolescent women in rural Maharashtra, India" Reproductive Health Matters. 10: 76-85.
[13]. Sharma A., Verma K., Khatri S., Kannan A. (2002) "Determinants of pregnancy in adolescents in Nepal" Indian Journal of Pediatrics. 69: 19-22.
[14]. Shrestha S. (2002) "Socio-cultural factors influencing adolescent pregnancy in rural Nepal" InternationalJournal of Adolescent Medicine & Health. 14:101-9.
[15]. Brennan L., McDonald J., Shlomowitz R. (2005) "Teenage births and final adult height of mothers in India" Journal of Biosocial Science. 37: 185-91.
[16]. Goonewardena I. and Deeyagaha Waduge R. (2005) "Adverse effects of teenage pregnancy" Ceylon Medical Journal. 50:116-20.
[17]. Rashid S. (2006) "Emerging changes in reproductive behaviour among married adolescent girls in an urban slum in Dhaka, Bangladesh" Reproductive Health Matters. 14: 151-9.
[18]. Singh M. B. and Patidar H. (2011) "Socio-economic correlates of age at marriage: reflection from tribal women of South-East Rajasthan" Annuals of association of Indian geographers, India. 31(2): 1-11.
[19]. Fraser, A. M., Brockert, J. E., Ward R. H. (1995) "Association of young maternal age with adverse reproductive outcomes" New England Journal of Medicine. 332, 113-7.
[20]. Goswami BK, Goswami BJ. Teenage Pregnancy. Obstet Gynaec India. 1989; 39:475-8.
[21]. Bhatia BD, Chandra R. Adolescent mother. Ind J Matern Child Health. 1993;4(3):67-70.
[22]. Mahavarkar S.H., Madhu C.K., Mule V.D. — A comparative study in teenage pregnancy. *Jobstet Gynaecol*. **28**(6):604-607, 2008.
[23]. Bhalerao A.R., Desai S.V., Dastur N.A., Daftary S.N.- Outcome of teenage pregnancy. *J. Postgrad Med*. **36**(3):136-139, 1990
[24]. WHO Publication: Maternal, newborn child and Adolescent.2012.
[25]. Chandrasekhar, S., "Factors Affecting Age and Marriage and Age at First Birth in India," Journal of Quantitative Economics 2010;83:86
[26]. International Center for Research on Women, "Child Marriage Facts and Figures "http://www.icrw.org/child-marriage-facts-and-figures
[27]. United States Agency for International Development, "New Insights on Preventing Child Marriage: A Global Analysis of Factors and Programs," 2007; 5: 9.

[28]. Roza Olyai, Prabuddh S Mittal. Teenage pregnancy(Case Studies): Gynaecological manual on adolescent girl and young women. Ashwini Bhalerao Gandhi, Parag Biniwale, Fogsi Publication, Jaypee 2009, Chapter 16, section 4: 132-37.
[29]. Harris J, Jolly MC, Sebrin et al. Obstetric risk of pregnancy in woman less than 18 years old. ACOG 2000; 96: 962-66.
[30]. Satin AJ, Leveno J, Sherman MLM, reddy NJ, Lowe TW, Mclntire DD. Maternal youth and pregnancy outcomes: Middle school versus high schoolage groups compared with women beyond the teen tears. Am J Obstet Gynecol 1994:171:1847.
[31]. The World Health Report (2005). Make every mother and child count. WHO.
[32]. UNFPA (2013) "Motherhood in Childhood: facing the challenge of Adolescent pregnancy, state of world population 2013" UNFPA.
[33]. Hayes C. D. (1987) "Risking the Future: Adolescent Sexuality, Pregnancy and Childbearing" National Academy Press, Washington, DC. Ed.
[34]. WHO (2012). "Adolescent Pregnancy, Fact Sheet N° 365" Media Centre, World Health Organisation. http:// www.who. int/ mediacentre/factsheets/fs364/en/,
[35]. Pratinidhi A, Shrotri A, Shah U. Risk of teenage pregnancy in a rural community of India. Indian JMatern Child Health. 1990 Oct-Dec;1(4):134-8.
[36]. Banerjee B, Pandey GK, Dutt D, Sengupta B, Mondal M. Teenage Pregnancy: A socially inflicted health hazard. Indian J Community Med.2009; 34:227-31.
[37]. Philips PS, Siva Kama Sunder. Teenage pregnancy. J Obstet Gynaec India.1978; 28:576-81. •
[38]. Pachuri S, Jamshedji A. Risk of teenage pregnancy. J Obstet Gynecol India..1983; 33 :477-81.
[39]. Seeniammal. Problem of teenage pregnancy. Handbook. 1983: 125-36.
[40]. Ballard W M, Gold E M, Medical & health aspects of reproduction in the Adolescent - Clinical obstetrics & Gynaecology 1971;14 :338-366.
[41]. Gortzak, Hallak M, Press F, Katz M, Shoham. Teenage pregnancy: risk factors for adverse perinatal outcome. Journal of Maternal-Fetal Medicine,2001 Dec;10(6):393-397.
[42]. Nusrad Shah, Dileep Kumar Rohra, Samia Shuja, Nagina Fatima Liaqat, Nazir Ahmad Solangi,Kelash Kumar, Kapil Kumar, Kanya Lal Ahuja, Syed Iqbal Azam, Nusrat Khan. Comparision of obstetric outcome among teenage and non-teenage mothers from three tertiary care hospitals of Sindh, Pakistan. JPMA 2011;61:962.
[43]. Prianka Mukhopadhyay, R.N.Chaudhuri, and Bhaskar Paul Hospita-based Perinatal Outcomes and Complications in Teenage Pregnancy in India. J HEALTH popuL NUTR 2010 Oct;28(5):494-500.
[44]. Candan iltemir DUVAN, Nilgiin Oztiirk TURHAN, Yiiksel ONARAN, ilknur inegol GUMU§,Hilal YUVACI, Elif GOZDEMiR. Adolescent Pregnancies: Maternal and Fetal Outcomes. The New Journal of Medicine 2010;27: 113-116.
[45]. Jejeebhoy SJ., Sebastian MP. Actions. that protect: Promoting sexual and reproductive health and choice among young people in India. Population Counci1.2003; Available from: http://www. popcouncil. org/pdfs/wp/ seasia/seawp18.pdf, Accessed 04/06/09.
[46]. HU Ezeqwui, LC Ikeako, F Ogbuefi. Obstetric outcome Teenage Pregnancy at a tertiary hospitalies in ENUGU, Nigeria. Nigerian jpurnal of clinical practical 201215(2):25.
[47]. Waszak C., Thapa S., Davey J. Influence of gender norms on the reproductive health of adolescent in Nepal-perspectives of youth. World Health Organization, Geneva. 2003; Available from: http://www.who. int/ reproductivehealth/ publications/ towards_ adult hood/11.pdf, Accessed 17/02/08.
[48]. Indranil Dutta, Prashant Joshi. Maternal and Perin.atal Outcome in Teenage Vs. Vicenarian Primigravidae - A Clinical Study. Journal of Clinical and Diagnostic Research. 2013;7(12): 2881-2884.
[49]. Pikee Saxena, S. Salhan, B. Chattopadhyay, M.P.S. Kola D. Nandan and S.V. Adhish. OBSTETRIC AND PERINATAL OUTCOME OF TEENAGE AND OLDER PRIMIGRAVIDAS- A RETROSPECTIVE ANALYSIS. Health and Population: Perspectives 2010; 33 (1):16-22.
[50]. Pathak P., Singh P., Kapil U., Raghuvanshi R. Prevalence of iron, vitamin A, and iodine deficiencies amongst adolescent pregnant mothers. Indian Journal of Pediatrics. 2003; 70: 299-301.
[51]. Mehreen Mehdi Nagvi, Azra Naseem.Maternal and Fetal Risks Associated with Teenage and Adult Pregnancy. Journal of Rawalpindi Medical College (JRMC); 2010;14(1):40-42 40.
[52]. Verma V, Das KB. Teenage primigravida: a comparative study. Indian J Public Health. 1997; 41: 52-5.
[53]. Shravage JC. Maternal and perinatal outcome in teenage pregnancy as compared to primigravida aged 20-29 years: A cross sectional study. J of Ohs and Gynae. 2000 ; 7:32-43.
[54]. Nayak AH, Puraik KG, Dala AR. Obstetrics outcome in Teenage Pregnancy. J Obstet Gynec India. 1992;42: 442-6.
[55]. Chhabra S. Perinatal outcome in Teenage Mothers. J Obstet Gynec India. 1991; 41: 30-2.
[56]. Pal A, Gupta KB, Randhawa I. Adolescent pregnancy: A high risk group. J Indian Med Assoc. 1997; 95: 127-8.
[57]. Ashok Kumar, Tej Singh, Sriparna Basu, Sulekha Pandey. Outcome of Teenage Pregnancy. Indian Journal of Pediatrics. 2007; 74(10): 927-31.
[58]. Gupta N, Kiran U, Bhal K. Teenage pregnancies: obstetric characteristics and outcome. Eur J Obstet Gynecol Reprod Biol 2008; 137: 165-71.
[59]. Ambedkar NN, DW Khandait, SP Zodpey, NB Kasturwar and ND Vasudeo. Teenage pregnancy outcome. Indian Journal of Medical Sciences 1999; 53(1): 19-23.
[60]. Aznar R, Bennet AE. Pregnancy in the adolescent girl. Am Obstet Gynaec. 1961; 81: 934.
[61]. Pun KD, Chauhan. Outcomes Of Adolescent Pregnancy at Kathmandu University Hospital, Dhulikhel, Kavre. Kathmandu Univ Med .1 2011;33(1)50-3.