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Original Research Article

Prospective Comparative Evaluation of the Sociodemographic Profile and Fetal Outcome in Teenage and Adult Mother

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Abstract

Aim & Objective: To find out the incidence of teenage pregnancy, to study the maternal and fetal outcome in teenage pregnancy and to compare the outcome of teenage pregnancy with that adult mother.

Material and Method: It is a prospective comparative study. 100 cases of teenage pregnancy (13-19 years) were compared with 100 cases of adult pregnancy (20-26 years) for fetal outcome. After randomization, assessment of Sociodemographic details was done with the help of semi-structured performa.

Results: The mean age of teenage mother and adult mother was 19.36 and 21.58 years respectively. Our study showed that preterm delivery was higher in teenage mothers (17%) as compared to adult mothers (6%). A Higher proportion of neonatal morbidity was present in teenage mothers (70%) as compared to adult mothers (24%). Birth asphyxia is a most common complication and seen in 12% of cases.

Keywords: Pregnancy, Teenage mother, Adult Mother, Neonatal complication

Introduction

Teenage pregnancy is defined as pregnancy that occurs in women aged between 10 and 19 years, with some authors distinguishing teenagers aged between 15 and 19 years from younger teenagers aged between 10 and 14 years. [1] Annually, an estimated 21 million girls aged 15–19 years in developing countries become pregnant and approximately 12 million of them give birth, whilst almost 777 000 births occur in adolescent girls younger than 15 years.[2]

In both developing and developed countries, teenage pregnancy remains a social problem that is more prevalent in marginalized communities and driven by poverty, inadequate education and scarce employment opportunities. [2-4]

Teenage or Adolescent pregnancy has become an important social and public health problem worldwide, more specifically in developing countries. It is estimated that each year approximately 16

million girls aged 15 to 19 years and 2.5 million girls <16 years give birth in developing countries.[1] The underlying perspective of teenage pregnancy as a social problem is markedly different among developed and developing countries. While most of the teenage mothers in developed countries tend to be unmarried and teenage pregnancy is seen as a social problem due inadequate sex education and contraception; adolescent mothers in developing countries are often married and their pregnancy may be welcomed by the family and society.[5]

Complications resulting from pregnancy and delivery are the major causative factor of death occurring amongst women whose ages are between 15 and 19 years in the developing countries. [6-8]

There are biological, psychological, socio-demographic and behavioral factors that may influence the outcome of a teenage pregnancy. [9,10] These include lack of information and access to family planning services, single teenagers, lack of formal education, low socio-economic status, gender-based violence, substance use and stigmatization by the community. [11-16]

As early marriages are common in rural India and early motherhood is a celebrating event in our villages but in fact, early childbearing is associated with multiple health risks for both mother and baby. A teenage mother is at in increased risk for poor maternal weight gain and high maternal mortality rate and also associated with the hypertensive disorders of pregnancy, anemia, sexually transmitted disease, preterm delivery and intrauterine growth restriction. The adverse fetal outcome includes preterm birth, low birth weight infants, stillbirth and birth asphyxia. [17]

Hence, this study aims to find out the incidence of teenage pregnancy, to study the maternal and fetal outcome in teenage pregnancy and to compare the outcome of teenage pregnancy with that adult mothers.

Material & Methods:

It is a prospective comparative study. 100 cases of teenage pregnancy (13-19 years) were compared with 100 cases of adult pregnancy (20-26 years) for fetal outcome admitted in the Department of Obstetrics and Gynecology, Patna Medical College & Hospital, Patna, over a period of one year.

Inclusion criteria:

- Only Singleton pregnancy was included.
- Study group: up to 19 years of age at the time of the delivery.
- Control group: 20-26 years.

Exclusion criteria:

Women more than 26 years of age. History of pre-pregnancy medical illness e.g. HT, diabetic, cardiac, renal, endocrine or autoimmune disease.

Ethical Aspects: The approval of the hospital's ethics was obtained prior to the commencement of the study. Informed consent was obtained from each woman recruited into the study.

Statistical Analysis: Statistical product and service solution SPSS-21 software was used for statistical analysis. Chi-square and student't' test was applied as and when necessary. P value less than 0.05 was taken as statistically significant.

Results:

The result showed that the mean age of teenage mother and adult mother was 19.36 and 21.58 years respectively. The maximum number of teenage mothers belong to low socioeconomic status (56%), housewife (96%) by occupation, illiterate (77%), Hindu (91%) by religion, living in a joint family (68%) and belong to the rural background (76%). While in adult mother's maximum number of females from middle (54%) socioeconomic class, housewife

(83%) by occupation, educated up to primary level (60%), Hindu (89%) by religion, living in nuclear family (54%) and belong to urban background (59%). Statistically, we found a significant difference in mean age, socioeconomic status, occupation, education level, family and area in both groups ($p < 0.05$). But on the basis of religion both groups were found statistically indifferent (p-value > 0.05). (Table 1)

Table 1: Distribution of sociodemographic profile in both group

Variables	Teenage Mother N%	Adult Mother N%	X2 (df)	*p* value
Age in Mean (SD)	19.36	26.58	-23.614	0.000
Socioeconomic Status High Middle Low	 09 35 56	 08 54 38	21.734	0.000
Occupation House wife Working	 96 04	 83 17	15.982	0.000
Education Illiterate Primary Secondary Graduate	 77 19 04 00	 22 60 14 04	87.275	0.000
Religion Hindu Muslim	 91 09	 89 11	4.916	0.088
Family Nuclear Joint	 32 68	 54 46	6.290	0.006
Area Urban Rural	 24 76	 59 41	27.899	0.000

The teenage mothers had a higher proportion (17%) of preterm deliveries as compared to the adult mothers (6%) while adult mothers had a higher proportion of post-term pregnancies (12%) as compared to the teenage mothers (4%). However, most of the deliveries were term delivery in both groups. The period of gestation during delivery was statistically significant in both groups (p-value 0.00). (Table 2)

Table 2: Distribution of Cases According to Period of Gestation (weeks)

Period of Gestation (weeks)	Teenage Mothers	Adult Mother	X 2 (df)	*p*-value
	N%	N%		
Pre-term (32-36)	17	06	20.518	0.000
Term (37-40)	79	82		
Post-term (>40)	04	12		

Vaginal delivery was the commonest mode of delivery in both groups, 67% of teenage mothers and 79% of adult mothers delivered by vaginal rout. Mode of delivery was significant in our study (p-value 0.01). (Table 3)

Table 3: Distribution of Cases According to Mode of Delivery

Mode of Delivery	Teenage Mothers	Adult Mother	X2 (df)	*p*-value
	N%	N%		
Assisted Breech	07	10	13.720	0.008
Forceps	02	0		
LSCS	24	11		
Normal Vaginal	67	79		

A maximum number of babies (75% & 94%) had good Apgar score (7-10) at 1 minute in both teenage and adult mothers respectively. Statistically, it was found significant (p-value 0.040). Most of the babies (80% & 96%) in teenage and adult mother had good Apgar score at 5 minutes. The difference was statistically significant (p-value 0.033). (Table 4)

Table 4: Distribution of Cases According to Apgar score at 1 and 5 Minutes

Apgar Score	1 Minute		5 Minute	
	Teenage Mothers	Adult Mothers	Teenage Mothers	Adult Mothers
	N%	N%	N%	N%
0-3	16	04	14	03
4-6	09	02	06	01
7-10	75	94	80	96

$\chi 2 = 6.145$ **p-value= 0.040 (1 Minute)**
$\chi 2 = 6.508$ **p-value= 0.033 (5 Minute)**

A Higher proportion of neonatal morbidity was present in teenage mothers (70%) as compared to adult mothers (24%). 33% babies of the teenage mother had low birth weight (<2.5 kg) as compared to adult mother's babies (16%). Intrauterine growth retardation (IUGR) was found in 13% babies of the teenage mother while 4% babies of the adult mother were IUGR. 12% babies of a teenage mother and 4% babies of the adult mother had birth asphyxia at the time of delivery. 9% and 3% babies were affected by meconium aspiration syndrome (MAS) in teenage and adult mother respectively. Neonatal sepsis occurred in 3% in babies of a teenage mother and 1% in babies of the adult mother. Neonatal hyperbilirubinemia found in 4% and 1% in babies of teenage and adult mother respectively. A similar incidence of congenital anomalies (1%) was found in both groups. Regarding fetal and neonatal complication, the difference was found statistically significant (p-value 0.00). (Table 5)

Table 5: Distribution of Fetal and neonatal complication in both group

Variables	Teenage Mother N%	Adult Mother N%	X2 (df)	*p*-value
IUGR	13	04	61.519	0.000
Low Birth Weight (<2.5 kg)	33	16		
Birth Asphyxia	12	04		
Neonatal Sepsis	03	01		
Neonatal Hyperbilirubinemia	04	01		
MAS	09	03		
Intestinal Perforation	01	0		
Congenital Anomalies	01	01		
No Complication	24	70		

MAS – Meconium Aspiration Syndrome

Fresh Still Birth (FSB) were 2% in teenage mother and 1% in the adult mother. While Macerated Still Birth (MSB) were 1% in teenage mother and 3% in the adult mother. Early neonatal death was found 2% in teenage mother's babies while 1% in adult mother's babies. There was 4% neonatal death in teenage mothers whereas 3% of adult mothers. 91% teenage mother and 92% adult mother delivered alive babies. It was found statistically insignificant (p-value 0.334). (Table 6)

Table 6 Distribution of Fetal and neonatal mortality in both group

Variables	Teenage Mother N%	Adult Mother N%	X2 (df)	*p*-value
FSB	02	01	5.816	0.386
MSB	01	03		
Early Neonatal Death	02	01		
Neonatal Death	04	03		
Normal	91	92		

FSB – Fresh Still Birth, MSB – Macerated Still Birth

Discussion:

Teenage is basically a time for growing up and the child is not physically and emotionally maturing 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. Furthermore, these young girls, having little or no knowledge of contraception, usually become pregnant soon after marriage which further aggravates the physical and psychological stress.[18]

Hypertensive disorders were significantly higher amongst pregnant teenagers

compared with the pregnant adults, a finding that is consistent with several studies.[19, 20, 21]Early detection of maternal complications is central to preventing adverse maternal and fetal complications. Although antenatal attendance in this study was good, hypertension in pregnancy occurred till delivery suggesting a pathophysiological basis for this condition in the light of good pharmacological intervention from the early stage of gestation. A study in Thailand, however, linked poor antenatal care to increased rate of pregnancy-induced hypertension and adverse fetal outcomes.[22]

The prevalence of illiteracy was found to be 32% in adolescent mothers and 36% in adult mothers. A study by Dutt et al in South India observed the prevalence of illiteracy to be 53.5% in adolescent mothers and 8.1% in adult mothers.[5]Several studies such as a systemic review in South Asia by Acharya et al, a prospective study by Doddihal et al in Belgaum and an observational study by Nessa et al in Bangladesh have shown that various factors like socio-economic status, education, occupational status, culture and family traditions were are consistently identified as risk factors for teenage pregnancy and its adverse outcome.[23, 24, 25]

Our study showed that preterm delivery was higher in teenage mothers (17%) as compared to adult mothers (6%). This is comparable to previous studies. [26, 27] But some study showed that preterm deliveries were less among teenage mothers and term and post-term deliveries were common among the teenage mothers.[28]

A Higher proportion of neonatal morbidity was present in teenage mothers (70%) as compared to adult mothers (24%). 33% babies of the teenage mother had low birth weight (<2.5 kg) as compared to adult mother's babies (16%). 12% babies of a teenage mother and 4% babies of the adult mother had birth asphyxia at the time of delivery. 9% and 3% babies were affected by meconium aspiration syndrome (MAS) in teenage and adult mother respectively. Neonatal sepsis occurred in 3% in babies of a teenage mother and 1% in babies of the adult mother. Neonatal hyperbilirubinemia found in 4% and 1% in babies of teenage and adult mother respectively.Early neonatal death was found 2% in teenage mother's babies while 1% in adult mother's babies. A study by Sharma et al. shows the similar results. [29]

Conclusion:

Teenage pregnancy is one of the most important public health problems. The health care provider must consider teenage pregnancy as "high risk" and should educate the teenage pregnant women to have early booking and regular antenatal check-ups, thereby allowing early identification and treatment of complications if any.Most important of all, education of the girl child can play a significant role in delaying the age of marriage as well as child-bearing age, thereby protecting the young girl from the risk of teenage pregnancy.

Prevention of teenage pregnancy and reduced complications of teenage pregnancy can be achieved by improving the overall socioeconomic status of our female population and better nutrition especially during pregnancy.

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