PREGNANCIES IN ADOLESCENTS: FETAL, NEONATAL AND MATERNAL OUTCOME

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ABSTRACT

We studied the perinatal morbidity and mortality among adolescent pregnancies in the semi-urban population of Gorakhpur. The number of eligible couples (females 15-44 yrs) were 24,000. Out of 430 adolescent married girls, 242 (56.3%) became pregnant during the study period. Nineteen (7.8%) of adolescent pregnancies were in the maternal age group less than 15 years and 110 (45.5%) and 113 (46.7%) pregnancies were in the age group 15-17 yrs and 17-19 yrs, respectively. The incidence of low birth weight babies was 67.3% of all live births. Infections during neonatal period, congenital anomalies and birth injuries were seen in 21.6, 8.6 and 13.1% newborns, respectively. Neonatal mortality rate was 136.2/1000 live births. Three adolescent mothers died during pregnancy or puerperium due to causes related to pregnancy. The incidence of LBW, neonatal and maternal morbidity and mortality associated with adolescent pregnancies were significantly higher.

Key words: Low birth weight, Maternal morbidity, Maternal mortality, Adolescent pregnancy.

Although, adolescent marriage is a cognizable offence(1), these marriages are still common in most of the states in India. Adolescent girls are not physically and mentally developed for marriage and childbirth; these marriages often lead to abortions, still births, low birth weight babies and poor survival of live borns. The maternal mortality in adolescence is also high(2). In order to study the problems related to adolescent pregnancies, we obtained information in 242 cases.

Material and Methods

The present study was carried out in 100 Anganwadi centres in urban slums of Gorakhpur city (covered under ICDS urban project). All the women of reproductive age group under these Anganwadi centres were visited by Pediatricians and Anganwadi workers and the marital status of adolescent girls(10-18 years) were recorded. Age of all these females was ascertained by questioning parents and by looking at birth certificate wherever possible. All the pregnant women below 19 years of age were registered for this study. Detailed information regarding pregnancies and outcome was recorded particularly in adolescent mothers. The pregnant mothers were examined by the Lady Health Visitors (LHV) or the Anganwadi workers and were provided antenatal advise and care on each visit. Five to seven follow-up visits either at home or hospital were made in each case during pregnancy. The deliveries

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Received for publication: July 14, 1990;
Accepted: January 5, 1993

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were conducted by trained Dais, LHV or doctors. In case of home delivery, birth weight was recorded by the Anganwadi workers within the first week of birth and was verified by doctors during subsequent visits. In hospital deliveries, birth weight was recorded just after birth by Pediatrician. Low birth weight was defined as birth weight of less than 2.5 kg. All newborns and mothers were examined by doctors during first week of birth. The term birth injuries was used to denote avoidable and unavoidable mechanical and anoxic trauma incurred by the infant during labor and delivery, the diagnosis of neonatal sepsis was made in the newborns with systemic illness and the term congenital malformation was used for the morphological defect of an organ, part of an organ or larger region of the body resulting from an intrinsically abnormal developmental process.

Results

In a population of 100,452, there were 24,400 eligible couples and of these married adolescent girls were 315. One hundred and fifteen girls were married during the study period. Of the 430 adolescent marriages, 242 (56.3%) pregnancies occurred during the period of study. The weights of the pregnant adolescents during the first trimester were less than 40 kg in 136 (56.2%), 40-45 kg in 70 (28.9%) and more than 45 kg in 36 (14.9%); 207 (85.5%) mothers were primigravida, while 35 (14.5%) had the second pregnancy. Anemia (hemoglobin less than 12 g/dl) was observed in 41 (16.9%) mothers.

The outcome of 242 pregnancies is detailed in Table I. Incidence of abortions was very high in 13-15 year age group (52.6%) whereas the incidence of live births were maximum in 17-19 year mothers.

Table II shows that of 162 live births, 10 (6.2%) were born after 42 weeks gestation; and 53 (32.7%) were premature. All neonates born to mothers of less than 15 year old were preterm (mean gestational age = 36 weeks).

Of 162 live born babies, 117 (72.2%) were delivered in hospitals and 45 (27.8%) at home. Among the hospital deliveries 52 (44.4%) mothers delivered normally, 47 (40.2%) through cesarean section and 18 (15.4%) by use of forceps. In home deliver-

<table>
<thead>
<tr>
<th>Age of pregnancy (yrs)</th>
<th>No. of cases (n=242)</th>
<th>Abortions</th>
<th>Live births</th>
<th>Still births</th>
<th>Maternal deaths</th>
<th>Neonatal deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-15</td>
<td>19</td>
<td>10 (52.6)</td>
<td>5 (26.3)</td>
<td>4 (21.1)</td>
<td>2 (10.5)</td>
<td>1 (5.26)</td>
</tr>
<tr>
<td>15-17</td>
<td>110</td>
<td>14 (12.7)</td>
<td>69 (62.7)</td>
<td>27 (24.6)</td>
<td>1 (0.9)</td>
<td>9 (8.18)</td>
</tr>
<tr>
<td>17-19</td>
<td>113</td>
<td>10 (9.1)</td>
<td>88 (77.6)</td>
<td>15 (13.3)</td>
<td></td>
<td>12 (10.2)</td>
</tr>
<tr>
<td>Total</td>
<td>242</td>
<td>34 (14.1)</td>
<td>162 (66.9)</td>
<td>46 (19.0)</td>
<td>3 (1.2)</td>
<td>22 (9.0)</td>
</tr>
</tbody>
</table>

*Still birth rate = 283/1000 live births.
* Maternal mortality rate = 18/1000 live births.
* Neonatal mortality rate = 136/1000 live births.
TABLE II—Maternal Age Related with Outcome of the Newborn

<table>
<thead>
<tr>
<th>Maternal age (yrs)</th>
<th>No. of live borns</th>
<th>Gestation</th>
<th>Birth weight</th>
<th>Morbidity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&lt;37 wks</td>
<td>37 wks</td>
<td>&lt;2.5 kg</td>
</tr>
<tr>
<td>13-15</td>
<td>5</td>
<td>5 (100)</td>
<td>–</td>
<td>5 (100)</td>
</tr>
<tr>
<td>15-17</td>
<td>64</td>
<td>18 (28.1)</td>
<td>46 (71.9)</td>
<td>52 (81.2)</td>
</tr>
<tr>
<td>17-19</td>
<td>93</td>
<td>30 (32.3)</td>
<td>63 (67.7)</td>
<td>52 (56.0)</td>
</tr>
<tr>
<td>Total</td>
<td>162</td>
<td>53 (32.7)</td>
<td>109 (67.3)</td>
<td>109 (67.3)</td>
</tr>
</tbody>
</table>

ies, 13 (28.9%) were normal, 30 (66.6%) mothers developed perineal tear and 6 (13.3%) had post partum hemorrhage. One maternal death and 4 cases of puerperal sepsis occurred in hospital deliveries whereas 2 maternal deaths and 10 cases of puerperal sepsis were observed in home deliveries. The number of low birth weight (LBW) babies were 109 (67.3%). All the five births from mothers below 15 year were LBW. Incidence if LBW in the age group 15-17 year and 17-19 year were 81.3 and 55.9% respectively (Table II). Neonatal mortality rate was 13.6%; the major causes included neonatal infections, birth injuries and congenital anomalies.

Perineal tear (14.5%), ante partum hemorrhage (9.9%) and hydramnios (8.1%) were the common complications (Table III).

Discussion

The United Nations demographic data indicates that in many developing and industrialized countries, births to women under twenty years of age represent a

TABLE III—Age of Mother and Maternal Morbidity

<table>
<thead>
<tr>
<th>Age of mothers (yrs)</th>
<th>No. of mothers</th>
<th>Anemia</th>
<th>Hydramnios</th>
<th>Antepartum hemorrhage</th>
<th>Toxemia</th>
<th>Perineal tear</th>
<th>Post partum hemorrhage</th>
<th>Puerperal sepsis</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;15</td>
<td>19</td>
<td>–</td>
<td>8 (40.1)</td>
<td>2 (10.5)</td>
<td>1 (5.3)</td>
<td>1 (5.3)</td>
<td>–</td>
<td>1 (5.3)</td>
</tr>
<tr>
<td>15-17</td>
<td>110</td>
<td>34</td>
<td>4 (30.9)</td>
<td>8 (3.6)</td>
<td>10 (7.3)</td>
<td>5 (4.5)</td>
<td>6 (5.3)</td>
<td>5 (4.5)</td>
</tr>
<tr>
<td>17-19</td>
<td>113</td>
<td>7</td>
<td>10 (6.2)</td>
<td>14 (8.8)</td>
<td>11 (12.4)</td>
<td>8 (7.1)</td>
<td>10 (8.8)</td>
<td>8 (7.1)</td>
</tr>
</tbody>
</table>

Figures in parantheses indicates percentages.
growing proportion of all births(3). Lee 
et al. reported that 70% of girls between 15 
and 19 years of age are married in India(4). 
Low rates of female literacy (39.4%) and 
social customs expose girls to pregnancy 
during adolescence(5). Demographers 
have estimated that if marriage was post-
poned from 16 to 20-21 years, the number 
of births would decrease by 20-30%(6). 
Data from 35 countries of Asia, Africa, 
Latin America show that neonatal mortal-
ity rates are consistently higher among 
infants of young mothers (age less than 
20) than among mothers in the third 
decade(7).

Low birth weight which is the result of 
premature labor, premature rupture of 
membrane and intra-uterine growth retar-
dation is a significant problem amongst 
infants born to teenage mothers. The inci-
dence of low birth weight babies in India 
ranges between 30-40% and they account 
for over 80% of neonatal deaths. The over-
all incidence of low birth weight babies in 
previous studies was 24-42%(8,9). The inci-
dence of low birth weight babies in teen-
age mothers in the present study is 67.3%. 
The very high incidence of low birth weight 
may be due to high proportion of under 
nourished and anemic adolescent moth-
ers(10). The incidence of premature labor 
in the present study in adolescent mothers 
was 32.7% as compared to other reports 
ranging from 11-31%(11-13).

Risk of low birth weight and infant 
mortality are greatest for the children of 
youngest mothers (≤15 years). Earlier ob-
servations also documented an increasing 
neonatal mortality rate with decreasing 
maternal age(7,10,13). The neonatal mor-
tality rate in 1982 was 21.81 per thousand 
live births in the present population in 
mothers above 20 years of age(14), 
whereas the neonatal mortality rate is 136/
1000 live births in the present study. Matern-
al mortality rate in India is 3.4/1000 live 
births(15) whereas in present study it was 
12/1000 live births. In previous studies 
from other centres the morbidity patterns 
in pregnant mothers above 20 years of age 
were very low in comparison to the present 
study(9,16).

The present study, therefore, concludes 
that there is an increased incidence of neo-
natal and maternal morbidity and mortality 
amongst adolescent mothers. This calls for 
urgent and effective measures to be taken 
to prevent adolescent marriages, both by 
Government and voluntary organizations 
by disseminating population information 
and ensuring wider participation in family 
welfare programmes. The primary goal of 
all such health education programmes 
should be to educate the masses to in-
crease the age of marriage especially for 
girls.

REFERENCES

1. Park JE, Park K. Demography and Family 
Planning. In: Text Book of Preventive and 
Social Medicine, 12th edn. Jabalpur, 

2. Litt IF. Problems related to adolescent 

3. Cvetkovich G, Grote B, Bjoreseth A, Sark-
issin J. Sexual behavior of teenagers. J Sex 

4. Lee LT, Paxman JM. Teenage Pregnancy: 
The problem has not gone away. Columbia 
Human Rights Law Review 1974-75, 6: 
307-356.

In: Text Book of Demographic Diversity 
of India. Ed Bose A. Delhi, B R Publishing 


