

Pregnancy and Labour Outcome in Teenage

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Abstract: Background: Adolescent pregnancy is a worldwide health problem especially relevant in developing countries. It is associated with an increased risk of adverse maternal and fetal outcomes such as maternal and neonatal mortality, cesarean section, preterm birth and low birth weight. These poor outcomes may be explained by a possible physical and psychological immaturity for reproduction in adolescents. In addition, adolescents usually have adverse social-economic factors that may affect the outcome of pregnancy (*Alves et al., 2012*). Methods: Our study is a descriptive prospective cross sectional study that included 100 teenage pregnant women between 13 -19 years old with single fetal pregnancy and without any chronic diseases, Full history was taken, ultrasound was done in addition to hemoglobin analysis and blood pressure estimation. The selected cases were followed up to detect pregnancy complications and outcome. Results: After collecting the results from our data sheet and analyzing them we found that abortions were 8%, preterm deliveries were 10%, and post-date deliveries were 11% while at-term deliveries were 71%. Conclusion: It was clear that teenage pregnancy is a high risk pregnancy; resulting in increased risks of abortions, premature deliveries, congenital malformations, pre-eclampsia, IUGR, cephalo-pelvic disproportion, PROM, low birth weight and maternal anemia.

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Introduction:

Teenage pregnancy is defined as a teenage girl, usually within the age of 13-19, becoming pregnant.(1)

Teenage pregnancy is an important public health problem as it often occurs in context of poor social support and maternal wellbeing. Adolescence means a transitional stage of physical and mental human development, involving biological, social and psychological changes, occurs between 10-19 years of age as the world health organization suggested.(2)

About 16 million adolescent girls between 15 and 19 years old give birth each year, accounting for roughly 11% of all births worldwide. Around 95% of these births occur in developing countries.(3)

Analysis of surveys conducted in 51 studies from mid-1990s to the early 2000s showed that up to 10% of girls were mothers by the age of 16, with the highest rates in sub-Saharan Africa and south – central and south – Eastern Asia.(2)

Child birth at an early age is associated with greater health risks for the mother. In developing countries, complications of pregnancy and child birth are the leading cause of death in young women aged 15-19 years.(4)

Because a substantial proportion of adolescent pregnancies are unwanted, may end in abortions (often unsafe abortions). As estimated 3 million unsafe abortions occur globally every year among adolescent girls aged 15-19 years.(5)

In Egypt, by the age of 19 years, are fifth of married women have already begun child bearing.(6)

In table (1) data on adolescent births in selected countries (assigned in accordance with UNICEF and UNFPA regional divisions) are shown. Although the statistical data published by UNICEF (1998) and UNFPA (1998) are not always identical, the differences are not fundamental.(1,7)

Causes of teenage pregnancy and adverse outcomes:

A) Non medical causes

- Social deprivation in developing countries, comparable relations between poverty and adolescent child bearing are observed.(8)

- Age of marriage: marriage generally occurs earlier in developing than in developed regions. In the Arab world. Patterns of early and near universal marriage prevail.(9)

- Sexual behaviour, contraceptive use and unplanned pregnancy: in many African countries, school girl (adolescent) pregnancy and the social problems it engenders is a growing public concern.(10)

- Ethnic differences: In 1997, United States birth rates for adolescents (15-19 years) were 36 for non-Hispanic white people, 88.2 for black people, 71.8 for native Americans and 97.4 for Hispanics.(11)

B) Medical causes:

- Gynecological immaturity of teenagers.

- Immaturity of the pelvic bones.(12)

* Complications of teenage pregnancy and labour:

(A) Complications of pregnancy:

Teenagers liable to pregnancy induced hypertension, anaemia, increased rate of caesarean section and death during their pregnancy.(13)

B) Outcome complications:

Preterm birth, low birth weight infant, smallfor gestational age, intrauterine growth restriction and congenital malformation were common among teenage pregnancy outcome.(14)

C) Post-partum complications: it has been claimed that teenage, mothers are more liable to post-partum complications as neonatal tetanus, poor feeding and postnatal depression.(15)

Prevention and management of teenage pregnancy:

A) Prevention:

Increasing the age at marriage, reduction of social deprivation and contraceptive service delivery for adolescents can be followed to prevent teenage pregnancy and its complications.(2)

B) Management:

Antenatal care, good nutrition of teenage pregnant women, and care during labour (psychological support, observation, monitoring and pain control during labour) reduce pregnancy complications and improve outcome in teenage pregnancy .(16)

Table (1): Births per 1000 females age 15-19 years in various countries (UNICEF, 1998).

Sub-Saharan Africa		M. East & N. Africa		East/ South Asia & Pacific		Americas		Europe	
Mauritius	45	Tunisia	18	Japan	4	Canada	24	Switzerland	4
Rwanda	54	Israel	19	Korea Rep	4	Chile	49	Netherlands	7
South Africa	70	Algeria	24	China	5	Trinidad	51	France	8
Botswana	83	Lebanon	26	Korea Dem	5	Haiti	53	Italy	8
Kenya	101	Morocco	28	Singapore	8	Peru	57	Belgium	9
Namibia	104	Kuwait	31	Cambodia	15	USA	60	Denmark	9
Zimbabwe	114	Turkey	43	Sri Lanka	20	Uruguay	60	Spain	10
Ghana	115	Jordan	44	Australia	22	Argentina	64	Sweden	10
Togo	119	Syria	44	Papua N Guin	24	Cuba	65	Finland	11
Mozambique	124	Iraq	45	Malaysia	26	<i>Reg. average</i>	68	Germany	13
Tanzania	124	Sudan	52	Myanmar	31	Mexico	69	Ireland	14
Eritrea	128	<i>Reg. average</i>	56	N Zealand	32	Brazil	71	Norway	16
Zambia	132	Egypt	62	Viet Nam	33	Ecuador	71	Greece	18
C. Afr. Rep.	134	UArab Emir	73	Mongolia	39	Colombia	74	Austria	21
Congo	136	Iran	77	Philippines	40	Paraguay	76	Lithuania	22
Nigeria	138	Yemen	101	Lao Rep	50	Bolivia	79	Portugal	22
Cameroon	140	Libya	102	<i>Reg. average</i>	56	Panama	81	Belarus	24
Madagascar	142	Saudi Arabia	114	Indonesia	58	Dom. Rep.	88	Poland	25
Senegal	142	Oman	122	Thailand	70	Jamaica	88	<i>Reg. average</i>	25
<i>Reg. average</i>	143			Bhutan	84	Costa Rica	89	Estonia	27
Gambia	153			Nepal	89	El Salvador	92	Slovenia	27
Burkina Faso	157			Pakistan	89	Venezuela	98	Bosnia/Herzeg.	29
Malawi	159			India	109	Guatemala	111	Hungary	29
Ethiopia	168			Bangladesh	115	Honduras	113	Latvia	30
Chad	173					Nicaragua	133	Albani	31
Gabon	175							Croatia	31
Uganda	179							UK	31
Guinea Bissau	180							Moldova Rep.	32
Mali	181							Czech Rep.	35
Sierra Leone	201							Slovakia	35
Congo Dem Rp	206							Ukraine	36
Liberia	206							Yugoslavia	38
Niger	266							Russian Fed.	3
Somalia	208							Macedonia	40
Angola	212							Romania	43

2. Patients and methods:

This is a descriptive prospective cross sectional study carried out on 100 pregnant teenage between 13-19 years old with single fetal pregnancy attending the maternity outpatient clinic at Sayed Galal and Al-Hussein University hospitals during the period from 6/2013 until 3/2014. Inclusion criteria included age (less than 20 years old), absence of chronic or familial disease and single fetal pregnancy. Exclusion criteria were women above 20 years old and history of chronic diseases. All patients signed an informed consent to declare their agreement to be controlled in the study, as agreed upon by the ethical medical

committee. Full history was taken, ultrasound was done in addition to hemoglobin analysis and blood pressure estimation. The selected cases were followed up to detect pregnancy complications and outcome. Chi-square (χ^2) test was performed. Exact test was used instead when the expected frequency is less than 5.

P-values less than 0.05 was considered statistically significant. All statistical calculations were done using computer programs SPSS (statistical package for the social science; SPSS Inc., Chicago, IL; USA) version 15 for Microsoft Windows.

Results:

Table (2): Show patient characteristics as regarding age, parity and socio-economic status (S. E.status).

Variety	No.	%
Age		
17 years	3	3%
18 years	24	24%
19 years	73	73%
Total	100	100%
Parity		
Pimi- gravida	78	78%
Second-gravida	19	19%
Third – grvida	3	3%
Total	100	100%
SE. status		
Low	96	96%
Medium	4	4%
High	0	0%
Total	100	100%

Table (3): Show the pregnancy outcome in the studied group.

Pregnancy outcome	No.	%
Abortion	8	8%
Preterm labour	10	10%
Post data	11	11%
Term	71	71%
Total	100	100%

Table (4): Show relation between age and pregnancy termination.

Pregnancy termination	19 years		18 years		17 yrs		Total	p-value
	No.	%	No.	%	No.	%		
NVD	38	52.05%	13	54.17%	2	66.67%	53	0.876
C.S	28	38.36%	10	41.67%	1	33.33%	39	0.939
Abortion	7	9.59%	1	4.17%	0	0.00%	8	0.722

Table (5): Show different indications of cesarean section.

Indication of C.S	No.	%
IUGR	2	5.13%
Breech	1	2.56%
Previous C.S.	6	12.82%
Post date	4	10.26%
Oligo – Hydramnios	7	15.38%
Fetal distress	5	12.82%
Cephalo-pelvic disproportion	6	17.95%
Pre- eclampsia	6	15.38%
Tender scar	2	5.13%
Total	39	100%

Table (6): Show neonatal fate and percentage of congenital malformation after exclusion of 8 abortion cases.

	No.	%
Neonatal fate		
No. neonate (abortion)	8	8%
Died neonates	2	2%
Neonatal ICU	19	19%
Preterm	7	7%
Post term	4	4%
Term	8	8%
Normal neonates	71	71%
Total	100	100%
Malformations		
No	90	97.82%
Yes	2	2.18%
Dudenal atresia	1	1.09%
An-encephaly (died)	1	1.09%

Table (7): Show relation between age and incidence of pre-eclampsia, IUGR, oligohydramnios, CPD, PROM and neonatal admission to NICU.

	19 years		18 years		17 yrs		Total	p-value
	No.	%	No.	%	No.	%	No.	
Pre-clampsia	5	6.85%	3	12.5%	0	0.00%	8	0.397
IUGR	0	0.00%	3	12.50%	0	0.00%	3	0.001
Oligo-hydramnios	6	8.22%	4	16.67%	0	0.00%	10	0.185
CPD	6	8.22%	1	4.17%	0	0.00%	7	0.830
PROM	12	16.44%	3	12.50%	0	0.00%	15	0.746
NICU	11	15.07%	8	33.33%	0	0.00%	19	0.009

This table shows highly statistically significant difference between the three groups regarding IUGR and NICU admission with p-value <0.001, while no statistically significant difference between the groups regarding other pregnancy complications with p-value >0.05

Discussion

It is unclear whether biological or socioeconomic factors are more important for the adverse outcomes in the pregnant adolescent. For some researchers, biological factors such as age or maternal growth is not a risk factor, and unfavorable outcomes are more likely associated with socio-economic and lifestyle factors. Indeed pregnant adolescents usually have socio-economic disadvantages, less schooling and little social support. On the other side, some studies have found that adolescents have more adverse pregnancy outcomes as compared to adult women, even after controlling the socio-economic factors.(17)

Our study is a descriptive prospective cross sectional study that included 100 teenage pregnant women between 13 -19 years old with single fetal pregnancy and without any chronic diseases, Full history was taken, ultrasound was done in addition to hemoglobin analysis and blood pressure estimation. The selected cases were followed up to detect pregnancy complications and outcome.

After collecting the results from our data sheet and analyzing them we found that abortions were 8%, preterm deliveries were 10%, and post-date deliveries were 11% while at-term deliveries were 71%.

Among 92 deliveries 39 were by cesarean section while 53 were by vaginal delivery from which there were 2 deaths one was severe premature 29WK gestational age and the other was anencephaly, they died soon after birth, other vaginal deliveries were 7 premature, 3 post-date and 41 at-term deliveries.

Concerning pregnancy and labour complications, pre-eclampsia was 8/92 cases, cephalo-pelvic disproportion was 7/92 cases, IUGR (intra-uterine growth retardation) was 3/92 cases, oligo-hydramnios was 10/92 cases, PROM (premature rupture of membrane) was 15/92 cases, malformations were 2/92 cases one is anencephaly and the other is duodenal atresia. Post-partum hemorrhage was 5/92 cases, 2 due to traumatic causes and 3 due to uterine atony, cases with hemoglobin between 7 and 8.9 g/dl described in our study as severe anemia were 6%, cases with hemoglobin between 9 and 10.9 g/dl described in our study as moderate anemia were 67% while cases with hemoglobin more than 11 g/dl described in our study as normal hemoglobin were 27%.

As regarding description of the studied group, 73% were 19 years old, 24% were 18 years old and 3% was 17 years old 96% were low socio-economic status with low monthly family income and low

education level, while 4% were medium socio-economic status with medium family income and medium education level. 24% know a method or more about contraception but 76% don't know any contraceptive method. Primi-gravida were 78%, second gravida were 19% and third gravida were 3%.

As regarding indications of cesarean deliveries were 39/92 cases, there were 2 cases with IUGR babies, 1 primi-gravida with breech presentation, 8 were previous cesarean section, 4 were post-date with decreased fetal movement, 6 were severe pre-eclampsia, 6 were obstructed due to cephalopelvic disproportion, 5 due to fetal distress, 7 due to oligo-hydramnios, one of them is malformed due to duodenal atresia.

As regarding neonates there were 19/92 neonates admitted to NICU (neonatal intensive care unit) due to low Apgar score, 2/92 died neonates, one was severely premature 29wk and the other was an-encephaly, 71/92 were normal neonates. As regarding neonatal weight there were 16/90 neonates were more than 3Kg, 68/90 neonates were 2.5 - 3 Kg, while 6/90 neonates were less than 2.5 Kg.

Fetal intra-uterine growth retardation and neonatal admission to NICU were higher in 18 years old mothers (12% & 33% respectively) than 19 years old mothers (0% & 15% respectively).

There was no cases of gestational diabetes in our study because all cases were within normal random blood sugar level.

Suwal (2012) has a prospective, cross sectional study which was carried out at College of Medical Sciences Teaching Hospital (CMSTH), Bharatpur, Nepal, during the period for two years from September 2008 to August 2010. There were 100 teenage pregnant females admitted in College of medical sciences teaching hospital, Bharatpur. Total 68% of teenagers belonged to low socioeconomic class. There was 1 case of abortion at 6 weeks, 10 preterm deliveries, 86 term deliveries and only 3 post-term deliveries, Out of 99 deliveries, there were 6 cases of perinatal death. 1 case of abortion is not included in this. There was comparatively more perinatal deaths in younger teens, Overall incidence of eclampsia was 4% in teenage mothers, All the cases of eclampsia were primigravida, Out of 99 babies, 23.23% had birth weight less than 2.5 kg., there is mounting evidence that young maternal age may be linked to adverse infant outcomes including low birth weight (LBW), preterm birth, and intrauterine growth restriction resulting in newborns small for gestational age (SGA), as well as neonatal mortality. Since younger mothers are more likely to be poor and less educated. (18)

Mukhopadhyay et al. (2010) has published a study which was conducted at the R.G. Kar Medical

College and Hospital in Kolkata during June 2006-May 2007. The study was a cross-sectional, observational type with two groups-cases and comparison-respectively, Primigravida teenage mothers aged 13-19 years were regarded as the cases while primigravida adult mothers aged 20-29 years formed the comparison group. The maximum number of teenage mothers (age 13-19 years) belonged to the age-group of 18-19 years (approximately 89%). There was no teenage mother aged less than 15 years, the teenage mothers had a higher proportion (65.7%) of normal vaginal delivery compared to the older mothers (61.4%). This could be due to a higher proportion of smaller babies in that age-group. About 34% of the teenage mothers had instrumental delivery (forceps and caesarean) compared to 39% of the adult mothers. The adult mothers had a higher proportion (7.7%) of post-term pregnancies compared to the teenage mothers (2%). The teenage mothers had a higher proportion (27.7%) of preterm deliveries compared to the adult mothers (13.1%). Teenage pregnancy was significantly associated with low birth weight (<2.5 kg). The mean birth weight was 2.59 kg in the teenage-group and 2.72 kg in the control group. Contraceptive-use was significantly higher among the adult mothers (18.9%) than among the teenage mothers (1.7%). Contraceptive-use was much lower among the teenage population possibly because of their lower levels of education and family pressure for childbearing. The comparison group had a higher proportion of breech delivery (3.1%) compared to the teenage mothers (1.7%), The most common overall indication for caesarean section was foetal distress (about 60%), followed by cephalopelvic disproportion (22.8%). Indication for caesarean section in foetal distress and pre-eclampsia was more commonly found among the teenage mothers than among the adult mothers. This study found that the number of low-birth weight babies was more in the case of teenage mothers (38.9%) compared to the adult mothers (30.4%). Adverse outcomes of teenage pregnancy arise not only from physical and medical causes but are also associated with individual, familial and sociocultural factors besides lack of access to healthcare, contraception, and other resources which is the prevailing situation in most developing countries. (19)

Fraser et al. (1995) found in his study that LBW cases were 7% of teenage pregnancies, prematurity were 10% and SGA were 14%, compared with 4%, 5% and 10%, respectively, in adults. Olausson et al. (1999) found neonatal mortality rate was 14.5 per thousand for mothers of 13-15 year olds compared to 4.6 for mothers of 20-24 year olds. Scholl et al. (1994) found that rate of anemia was reported to be up to 35% in young teenagers compared with 13.8%

in the adult control group. The rate of PIH was similar: 8.5% in the young teenagers compared with 7.9% in adults. (20,21,22)

Conclusion

It was clear that teenage pregnancy is a high risk pregnancy; resulting in increased risks of abortions, premature deliveries, congenital malformations, pre-eclampsia, IUGR, cephalo-pelvic disproportion, PROM, low birth weight and maternal anemia.

Recommendations

So, Teenage marriage should be prevented by the governments of all countries by increasing the legal age of marriage, elevating educational level, fighting poverty and increasing the awareness of the importance of contraception of already married adolescents. Teenagers pregnant women should be provoked towards antenatal care, supplying extra nutrients, psychologically supported and assessed several times during pregnancy to improve outcome and to decrease complications.

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