

“Outcome of Clinical Profile and Epidemiology of Adolescent Pregnancy and Labour- A Prospective Case Control Study”

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Abstract

Introduction: In recent decades adolescent pregnancy has become an important health issue in a great number of countries, both developed and developing. Adolescence is a period of rapid physical, emotional, cognitive and social growth and development. Generally adolescence begins at age 11-12 years and ends between 18 and 21. **Objective:** To assess the outcome of clinical profile and epidemiology of adolescent pregnancy and labour. **Materials and Methods:** This is a prospective case control study was carried out in the Department of Obstetrics and Gynaecology of 300 Bed Hospital, Narayanganj, Bangladesh. Fifty (50) pregnant women of 15 to 19 years case group and fifty (50) pregnant women of 20 to 35 years control group who were admitted in hospital from January to June-2019. The type of study followed was a prospective case control study where patients belonging to 15 to 19 years age group constitute the cases and those belonging to 20-35 years age group constitute the control group. **Results:** This study shows frequency of adolescent patients admitted was 5.75%. The majority of adolescent mothers were between more than 17 years upto 19 years (88%). Majority of adolescent mothers were Muslim (84%) and 88% of older group were Muslim. In control group majority from age 20-30 years (74%). Above table shows geographical distribution of cases in this series shows 30% from different places outside of city. 20% of older control was from outside the city. Most of the adolescent group was house wife (86%) and older control were 84% house wife. Our study shows 54% of adolescent patient had no antenatal checkup, 18% had irregular antenatal checkup and 28% had regular checkup. Whereas in control group 46% had regular antenatal checkup and 14% had irregular checkup and 40% had no checkup. The differentiation was statistically significant between two groups ($P < 0.05$). Above table-3 shows 90% of adolescents were primigravida and 38% of control group were primigravida. The differentiation was statistically significant between two groups ($P < 0.001$). 64% of adolescent mothers were anaemic, 26% had oedema, 14% were proteinuric, 22% were hypertensive. Eclampsia, preeclampsia, preterm labour, prolonged labour, obstructed labour, PROM were significantly higher among the adolescent mothers than among the older mothers. In control group 40% were anaemic, 4% had edema, 4% were proteinuric and 2% hypertensive. The differentiation was statistically significant between groups ($P < 0.05$). Shows that 54% of adolescent mothers have normal vaginal delivery, 4% had assisted breech delivery, 2% had forcep delivery, 4% had ventouse delivery and 36% had caesarean section. Whereas in control group caesarean section was 38% and normal vaginal delivery 58%. The differentiation was not statistically significant between two groups ($P > 0.05$). In our study 8% perinatal mortality in adolescent group and in the control group it was 6%. The differentiation was statistically not significant between two groups ($P > 0.05$). **Conclusion:** Adolescents are real assets and can be the driving force of positive change in the society. They need to be brought up with care and tenderness and it is our duty to help them grow safe and with high-quality of life. Adolescence pregnancy is universally accepted as high-risk pregnancy.

Keywords: Epidemiology, Adolescent Pregnancy, Clinical Outcome.

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I. Introduction

In recent decades adolescent pregnancy has become an important health issue in a great number of countries, both developed and developing. Adolescence is a period of rapid physical, emotional, cognitive and social growth and development. However, pregnancy in adolescence is by no means a new phenomenon. In large regions of the world (eg. South Asia, the Middle East and North Africa) age at marriage has traditionally been low in kinship based societies and economics. Generally adolescence begins at age 11-12 years and ends between 18 and 21 [1]. WHO defines adolescence as the period between 10 and 19 years of age which broadly corresponds to the onset of puberty and the legal age of adulthood [2]. Adolescence (Latin: *adolescere*= to grow) is the period of life during which the carefree child becomes the responsible adult [3]. For years it has been accepted that adolescent is a high risk pregnancy. In a developing country, once a girl from an economically disadvantaged family has reached puberty, the greatest threat to her life is pregnancy and childbirth. In South Asia, 54% of teenagers are married compared to 24% in South Asia and only 2% in East Asia. In Bangladesh 90% of girls are married before the age of 18 and 33% of these below the age of 19 years are mothers of two children [4]. The adolescent mother is more likely to develop anaemia, eclampsia and obstructed labour as reported from Nigeria and Bangladesh. The highest MMR of 38 per 1000 was seen in girls 15 years and younger compared to 5.8 in the 21-24 years age group. In 1998 Halida et al. have found that marriage in Bangladesh is very common between ages 15 to 19 years. 69% of female marry by this age [5]. In 1998 BIRPERHT study showed that 16.7% were married teenagers and 7.8% were pregnant [6]. In 1996 Bangladesh Bureau of Statistics showed that 66% adolescents are married out of which 33% become pregnant and the fertility rate of adolescents in Bangladesh is 78/1000 which is high in comparison to the developed countries [7]. In such cases most girls are married soon after menarche, fertility is high and consequently many children are born from adolescent mothers [8]. Many pregnant adolescents come from low socioeconomic background and have poor education and perhaps poor general health due to inadequate nutrition, cigarette smoking, drug abuse or STDs. Nutrition is an important problem. So optimal care should be given to teenage mothers, not only to improve the pregnancy outcome but also to enhance their social, educational and emotional adjustment [9]. About 69% of the girls get married before crossing their adolescence and of them 34% give birth to children exposing themselves to major health hazards. Teenage pregnancy is fairly common in Bangladesh due to early marriage, lower educational status and marrying before 20 years of age [10, 11, 12]. Early teenage pregnancy and its effect cause very serious problem for the individual, family and society as a whole in Bangladesh because more than 75% of adolescent pregnancies are unplanned [13]. Complication from pregnancy and childbirth are the leading cause of death in young women aged 15 to 19 years in developing countries [14]. According to Bangladesh Reproductive Health Statistics (BBS, 1998) 12.7% of adolescents were already married. The higher death rate among girls compared to that of boys aged 15 to 19 years (1.81 against 1.55 per, 10000 population) is mainly due to maternal causes and in true sense it is gross violation of human rights [15]. In developed country modernization may contribute to unwanted pregnancy as a result of relaxation of traditional, cultural norms prohibiting premarital sexual activity. But in our country early marriage, ignorance, illiteracy, lack of adequate healthcare facilities, failure to seek family planning advice due to social taboos and shyness are the cause of this problem [16]. In spite of government efforts to raise the legal age of marriage from 16 to 18 years, most marriage in villages occur soon after the menarche. This study is designed to determine the correlation between the maternal age and outcome of pregnancy in patients suggestions will be made for improving maternal and child health care in Bangladesh.

II. Materials And Methods

Materials and Methods: This is a prospective case control study was carried out in the Department of Obstetrics and Gynaecology of 300 Bed Hospital, Narayanganj, Bangladesh. Fifty (50) pregnant women of 15 to 19 years case group and fifty (50) pregnant women of 20 to 35 years control group who were admitted in hospital from January to June-2019. The type of study followed was a prospective case control study where patients belonging to 15 to 19 years age group constitute the cases and those belonging to 20-35 years age group constitute the control group. A much larger sample from control group could have been taken to ensure representativeness of the sample but due to time and resource constraints a sample of 50 was selected as control group following the same sampling scheme as stated earlier.

After formulation of aims and objectives of the study, a data sheet and questionnaire form (Appendix) were made for recording all relevant parameters and these were then compared with control group and cases. Careful history and thorough clinical examination was performed with the aim of detecting clinical symptoms and signs suggesting or warning complication of pregnancy and delivery including perinatal complications. At entry into the study, a detailed history about socio- demographic, past obstetric history, present history, record of antenatal checkup and present complications were studied and a comparison of these variables were made between teenagers and older group. On admission into the labour ward a questionnaire was filled up. Age of the patients was calculated in years and was recorded accordingly. Case: Fifty (50) pregnant women of 15 to 19

years admitted in hospital from January to June-2019. Control: Fifty (50) pregnant women of 20 to 35 years who were admitted into the hospital during the same period.

Inclusion criteria:

- Known gestational age.
- Singleton pregnancy.
- Absence of medical disorders.

Exclusion criteria:

- Patients having known medical diseases which can adversely affect the outcome.
- Essential hypertension.
- Age > 35 years.
- Grand multipara - para more than 5.
- Age 19 years and less.
- Medical diseases.
- Essential hypertension.
- Diabetes mellitus.
- Kidney disease.
- Heart disease.
- Twin pregnancy.

Data Analysis: Data were analyzed by using computer based programme statistical package for social science (SPSS) for window version 19.

III. Results

Among total 2296 obstetric cases was 5.75% (132 cases were teenagers and 2101 were between 20-35 years old control group). The frequency of adolescent patients was admitted 5.75%. Majority of adolescent mothers were Muslim (84%) and 88% of older group were Muslim. Above table shows majority of adolescent mothers were between more than 17 years up to 19 years (88%). In control group majority from age 20-30 years (74%). Above table shows geographical distribution of cases in this series shows 30% from different places outside of city. 20% of older control was from outside the city. Most of the adolescent group was house wife (86%) and older control were 84% house wife. 70% of adolescent patient belong to the monthly income group below Tk. 3000 and 52% of control group belong to this income group. Above tables shows 38% adolescent mothers were illiterate, 32% had primary education, 8% had secondary education and 22% could sign only. In control 20% illiterate, 24% could sign only, 38% had primary education and 18% had secondary education. Statistics significant test for difference in proportions were conducted in some of the events of both groups. The differentiation was statistically significant between two groups (P<0.05) (Table-1).

Table-1: Demographic details of admitted adolescent pregnant patient and comparing it with no adolescent pregnant mother (N=100)

Age group	Case (n=50)		Age group	Control (n=50)	
	No.	%		No.	%
<17 years	06	12	20-30 years	37	74
>17-19 years	44	88	>30-35 years	13	26
Religion					
Muslim	42	84		44	88
Hindu	4	8		5	10
Others	2	4		1	2
Resident					
City dwellers	35	70		40	80
Non city dwellers	15	30		10	20
Occupation					
House wife	43	86		42	84
Day labourer	2	4		3	6
Housemaid	1	2		1	2
Work in garments factory	4	8		1	2
Student	0	0		1	2

Service in office	0	0	2	4
Income/ month				
<3000 TK.	35	70	26	52
3000-5000 TK.	08	16	10	20
> 5000 Tk.	07	14	14	28
Education status				
Illiterate	19	38	10	20
Can sign only	11	22	12	24
Primary education	16	32	19	38
Secondary education	4	8	09	18

Table-2: Antenatal checkup (N=100)

Antenatal checkup	Case (n=50)		Control (n=50)		X ²	P value
	No.	%	No.	%		
Regular	14	28	23	46		
Irregular	09	18	07	14	7.141	0.028
No checkup	27	54	20	40		

Table-2 shows 54% of adolescent patient had no antenatal checkup, 18% had irregular antenatal checkup and 28% had regular checkup. Whereas in control group 46% had regular antenatal checkup and 14% had irregular checkup and 40% had no checkup. The differentiation was statistically significant between two groups (P<0.05).

Table-3: Parity distribution (N=100)

Parity and gravidity	Case (n=50)		Control (n=50)		X ²	P value
	No.	%	No.	%		
Primigravida	45	90	19	38	56.11	0.001
Multigravida	5	10	31	62		

Above table-3 shows 90% of adolescents were primigravida and 38% of control group were primigravida. The differentiation was statistically significant between two groups (P<0.001).

Table-4: Clinical state (N=100)

Parameters	Case (n=50)		Control (n=50)		X ²	P value
	NO.	%	NO.	%		
Anaemia	32	64	20	40		
Jaundice	0	0	0	0	6.666	0.01
Oedema	13	26	02	4		
BP						
<90 mm of Hg	38	76	45	90		
90-110 mm of Hg	07	14	04	8	8.15	0.017
>110 mm of Hg	05	10	01	2		
Hypertension	11	22	01	2		
Albumin in urine	07	14	02	4	21.429	0.001

Table-4 shows clinical examination findings and difference between two groups. 64% of adolescent mothers were anaemic, 26% had oedema, 14% were proteinuric, 22% were hypertensive. In control group 40% were anaemic, 4% had edema, 4% were proteinuric and 2% hypertensive. The differentiation was statistically significant between groups (P<0.05)

Table-5: Mode of delivery (N=100)

Mode of delivery	Case (n=50)		Control (n=50)		X ²	P value
	NO.	%	NO.	%		
Normal vaginal delivery	27	54	29	58		
Assisted breach delivery	02	4	0	0	0.02	0.887
Forceps	01	2	0	0		

Ventouse	02	4	01	2
Caesarean section	18	36	19	38
Destructive operation	0	0	0	0
Laparotomy	0	0	0	0

Table-5 shows 54% of adolescent mothers have normal vaginal delivery, 4% had assisted breech delivery, 2% had forcep delivery, 4% had ventouse delivery and 36% had caesarean section. Whereas in control group caesarean section was 38% and normal vaginal delivery 58%. The differentiation was not statistically significant between two groups (P>0.05).

Table-6: Maternal mortality (N=100)

Cause of maternal death	Case (n=50)		Control (n=50)	
	No.	%	No.	%
Eclampsia	1	2	0	0
Sepsis	1	2	0	0
DIC	0	0	0	0

Table-6 shows the mortality in adolescent is higher than the control group.

Table-7: Perinatal morbidity (N=100)

Foetal	Case N=100		Control N=100		X ²	P value
	No.	%	No.	%		
Prematurity	08	16	03	6	8.889	0.114
Birth asphyxia	14	28	09	18		
IUGR	01	2	1	1		
Birth injury	01	2	0	0		
Jaundice	03	6	2	4		
Septicaemia	01	2	0	0		

Table-8 shows perinatal morbidity in two groups. The differentiation was statistically not significant between two groups (P>0.05).

Table-8: Perinatal mortality (N=100)

Death	Case N=100		Control N=100		X ²	P value
	No.	%	No.	%		
Antepartum & intrapartum	3	6	2	4	0.227	0.634
Neonatal	1	2	1	2		
Total	4	8	3	6		

Table-9 shows 8% perinatal mortality in adolescent group and in the control group it was 6%. The differentiation was statistically not significant between two groups (P>0.05).

IV. Discussion

In this study, we evaluated the socio-demographic profile, with Adolescent Pregnancy compared with Case and control group. This study shows frequency of adolescent patients admitted was 5.75%. The majority of adolescent mothers were Muslim (86%). 88% of older group were Muslim. The majority of adolescent mothers were between more than 17 years upto 19 years (88%). Bangladesh is a developing country with about 140.3 million population. About 50% of them are women and 15.4% belonging to less than 20years of age. 30.57 million Women are between the ages of 15-49 years (Cencus 2001 primary report) [17]. In my study adolescent pregnancy is 5.75%. According to Bangladesh Bureau of Statistics [18], which shows that marriage rate of adolescents per 1000 adolescent girl is 8.5. In 1998 Halida et al. have found that marriage in Bangladesh is very common between ages 15 to 19 years. 69% of female marry by this age [19]. In 1996 Bangladesh Bureau of Statistics showed that 66% adolescents were married out of which 33% became pregnant [18]. In control group majority from age 20-30 years (74%). According Susan et al. [20], pregnancy of teenage patient's was 32% In South East Asia 54% of teenagers are married compared to only 2% in East Asia [21]. In US about 11% of all births in 2002 were to teens (ages 15 to 19) [22]. According to Sundari TK 13% pregnant women were

adolescent between 15 and 19 years of age [23]. In a study of Zeck W et al. [2] 51% of adolescents had been 17 years old at the time of delivery. Shows that 30% of adolescents came from places outside city. Study of Sarker et al. shows 51.3% of adolescent mothers come from rural areas [25]. My study shows that 70% of the adolescent mothers have come from low socioeconomic class. The increase risk of adverse pregnancy outcome associated with low maternal age has largely been attributed to poor socioeconomic conditions among teenagers [26]. Study of Yodev and Yong showed most of the teenage mothers were from a lower socioeconomic background [27]. Table 1 shows that most of adolescent group are housewife (86%). Cooksey et al. have shown that increases maternal education leads to first intercourse at a later age and a higher likelihood of using contraceptives at first intercourse [28]. In a study of Zeck et al. [24], two thirds of the adolescents had not used any type of contraception before becoming pregnant. DHS and UNIS (1999-2000) [29] and BDHS report (1999-2000) [30] show that contraceptive prevalence in Bangladesh is 53.8%. My study shows that only 6% adolescents used contraceptives and 94% of adolescent's never used contraceptives. According to BANBEIS report 2003, 65.5% Bangladeshi are educated [31]. In my study 32% adolescent mother have primary education and 8% have secondary education. In study of Zeck et al. [24] the majority of pregnancy among the adolescents was unintended (84%). In our study shows that 54% of pregnancies were unplanned, main causes of which are ignorance about contraceptives. According to BDHS report (1999-2000) 48% have antenatal checkup in Bangladesh [30]. Study of Yodev states that adolescent mother use prenatal care less than the older mother [27]. In my study 28% adolescent had regular antenatal checkup and 54% adolescent had no antenatal checkup. But 46% of the older mothers had regular antenatal checkup. According to Osbourne G K et al. a study shows that "anaemia was the only antenatal complication that was significantly increased [32]. Study of Susan et al. shows that pregnancy with maternal anaemia is 26.3%, UTI-19.9%, respiratory tract infection- 5.4% [33]. My study shows that 64% of adolescent mothers are anaemic, 26% has oedema, 22% are hypertensive and 14% have proteinuria. Study of Sarker CS et al. showed that eclampsia and pre-eclampsia affected teenage mothers (10.6%) were much more frequent than mother of 20 year so age and above (5.2%). Incidence of 30% low birth weight baby, 21.1% prematurity and 16.4% perinatal mortality were recorded [25]. In a study it is showed that the normal more of delivery was commoner in teenagers (90%) in comparison to control group (72%) probably because of higher number of low birth weight baby. There was lower caesarean and instrumental delivery [34]. Our study shows 8% perinatal mortality in adolescent group and in the control group it was 6%. The differentiation was statistically not significant between two groups ($P>0.05$). According to British journal of obstetrics and gynecology the caesarean section rates were not higher for younger adolescents in comparison to the control group [17]. My study shows that 54% of adolescent mothers have normal vaginal delivery, 4% had assisted breech delivery, 2% had forcep delivery, 4% had ventouse delivery and 36% had caesarean section. Whereas in control group caesarean section was 38% and normal vaginal delivery 58%. The differentiation was not statistically significant between two groups ($P>0.05$).

V. Conclusion

Adolescents are real assets and can be the driving force of positive change in the society. They need to be brought up with care and tenderness and it is our duty to help them grow safe and with high-quality of life. Adolescence pregnancy is universally accepted as high-risk pregnancy. Due to complications like ecla obstructed labour, prolonged labour, CPD, preterm labour, low birth weight baby etc. But we can easily reduce the number of such high risk teenage, unwanted and unplanned pregnancy through improved family planning services. We can reduce the number and severity of obstetric complications through regular antenatal checkup.

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