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Complications related to delivery between adolescent pregnant women of the sweeper community and general population

Dr. Farida Easmin Shelley*

ABSTRACT

Though pregnancy is a physiological event, all pregnancies are at risk of developing some types of complications. However, the risk is increased when it happens in an adolescent woman whose growth is yet to be completed. It may be even higher if the adolescent woman belonged to a marginalized community. The present study was undertaken to compare the natal complications between adolescent pregnant women of a marginalized community and adolescent pregnant women of the general population. Three hundred and thirty three subjects of Sweeper Community of Dhaka City and at Dhaka Medical College Hospital, Dhaka, Bangladesh were included in this retro-prospective case-control study. One hundred and fourteen married women of sweeper community who conceived before completion of 19 years and have already completed the events of pregnancy were considered as case, while 219 women of other than sweeper community with same characteristics as cases were taken as control. Majorities of the cases and controls (97.7% vs. 93.9%) encountered some types of natal complications. Obstructed labour and perineal tear all were higher in the case group than those in the control group (46.4% vs. 34.9%, p = 0.044 and 58.2% vs. 43.3%, p = 0.011 respectively). The risks of obstructed labour and perineal tear were 1.6 times (95% CI = 1 – 2.6) and 1.8 times (95% CI = 1.1 – 2.9) higher respectively in the case group than those in the control group. Mal-presentation was considerably higher in the former group than that in the latter group (p = 0.124), while foetal distress was almost identical between the two groups. Complications during delivery (obstructed labour and malpresentation) are frequently common in adolescent pregnancy but they are more so in the marginalized group.

Keywords: ***Adolescent, pregnant, woman, sweeper, population and natal complications.***

INTRODUCTION

Adolescents constitute about one-quarter of the total population in most developing countries and about one-seventh in developed countries. Bangladesh has nearly 27 million adolescents among which 13.7 million are girls. Adolescents and youth in Bangladesh are particularly vulnerable to health risks, especially in the area of reproductive health. This is due to their lack of access to information and services and societal pressure to perform as adults.[1] Scholl *et al.* (1994)[2] in a meta-analysis and review of pregnancy complications in developing countries, observed that teenagers were at increased risk of maternal anemia, pre-term birth, obstructed labour and cesarean delivery. Although majority of the

* Associate Professor, Bangladesh Open University, Gazipur, Bangladesh.

studies conducted in this regard are hospital based, where high-risk cases are more likely to be delivered[3-10], adolescent pregnant women, because of their incomplete growth, experience higher risk than their adult counterpart. In particular, if the adolescent woman belonged to a poor marginalized community, her own physical make-up is further compromised. That purpose the present study was intended to compare the natal complications between adolescent pregnant women of a marginalized community with those of the general population.

SUBJECTS & METHODS

This retro-prospective case-control study was conducted at Gonoktuly Sweeper Colony, Hazaribag and in-patient and out-patient Department of Gynae & Obstetrics, Dhaka Medical College Hospital, Dhaka, Bangladesh between January 2006 to July 2008. A sample size of 333 subjects were selected consecutively, of them 114 married women of sweeper community who conceived before completion of 19 years of age and have already completed the events of pregnancy (natal and postnatal period) were considered as case, while the remaining 219 women of other than sweeper community with same characteristics as cases were taken as control. Data were analyzed using computer SPSS software (Statistical Package for Social Science) for windows, version 11.5. The test statistics employed to analyze the data were Chi-square (χ^2) and Odds Ratio (to estimate the risk of natal and maternal complications).

RESULTS

The case group was relatively younger compared to control group (17.4 ± 1.2 vs. 18.2 ± 1.0 yrs). About 45% of the cases being < 18 years old as opposed to 16.9% in the control group ($p < 0.001$). Case group was also less educated than the control group (70.2% vs. 85.4%, $p = 0.001$). Over half of subjects in the both groups had monthly family income in the range of Taka 3 – 5 thousand (Table I). A higher proportion (70.8%) of cases were delivered at home as opposed to 30.6% of controls. A staggeringly low proportion of cases (6.2%) as opposed to controls (63%) utilized hospital for delivery ($p < 0.001$) (Table II). More than 80% of the deliveries in the case group and 69.6% in the control group experienced normal vaginal delivery ($p = 0.136$) with no significant difference between the groups in terms of live-birth. Caesarean section was less common in the former group (18.6%) than that in the latter group (27.6%) (Table III). Obstructed labour and perineal tear all were higher in the case group than those in the control group (46.4% vs. 34.9%, $p = 0.044$ and 58.2% vs. 43.3%, $p = 0.011$ respectively). The risks of obstructed labour and perineal tear were 1.6 times (95% CI = 1 – 2.6) and 1.8 times (95% CI = 1.1 – 2.9) higher respectively in the case group than those in the control group. Mal-presentation was considerably higher in the former group than that in the latter group ($p = 0.124$), while foetal distress was almost identical between the two groups (Table –IV)

Table I. Comparison of age between case and control groups

Demographic characteristics	Group		p-value
	Case (n = 114)	Control (n = 219)	
Age (years)*			
< 18	51(44.7)	37(16.9)	< 0.001
18 – 19	63(55.3)	182(83.1)	
Respondents' education*			
Illiterate	34(29.8)	32(14.6)	
Literate	80(70.2)	187(85.4)	0.001
Husbands' education*			
Illiterate	40(35.1)	21(9.6)	
Literate	74(64.9)	198(90.4)	<0.001
Family income (Tk)*			
<3000	53(46.5)	53(24.2)	
3000 – 5000	58(50.9)	131(59.8)	<0.001
>5000	3(2.6)	35(16.0)	
Religion*			
Muslim	100(87.7)	207(94.5)	0.133
Hindu	14(12.3)	12(5.5)	

*Data were analyzed using **Chi-square (χ^2) Test** and **level of significance** was **0.05.**

Table II. Comparison of places of delivery between groups

Places of delivery	Group		p-value
	Case (n = 114)	Control (n = 219)	
Home	80 (70.8)	67 (30.6)	
MCH	19 (16.8)	11 (5.0)	
Hospital	7 (6.2)	138 (63.0)	< 0.001
SBA	7 (6.2)	3 (1.4)	

Data were analyzed using **Chi-square (χ^2) Test** and **level of significance** was **0.05.**

Table III. Comparison of mode of delivery between groups

Mode of Delivery	Group		p-value
	Case (n = 114)	Control (n = 219)	
Normal	91(80.5)	149(69.6)	
Caesarean	21(18.6)	59(27.6)	
Forceps	1(0.9)	5(2.3)	0.136
Others	00	1(0.5)	

Data were analyzed using **Chi-square (χ^2) Test** and **level of significance** was **0.05.**

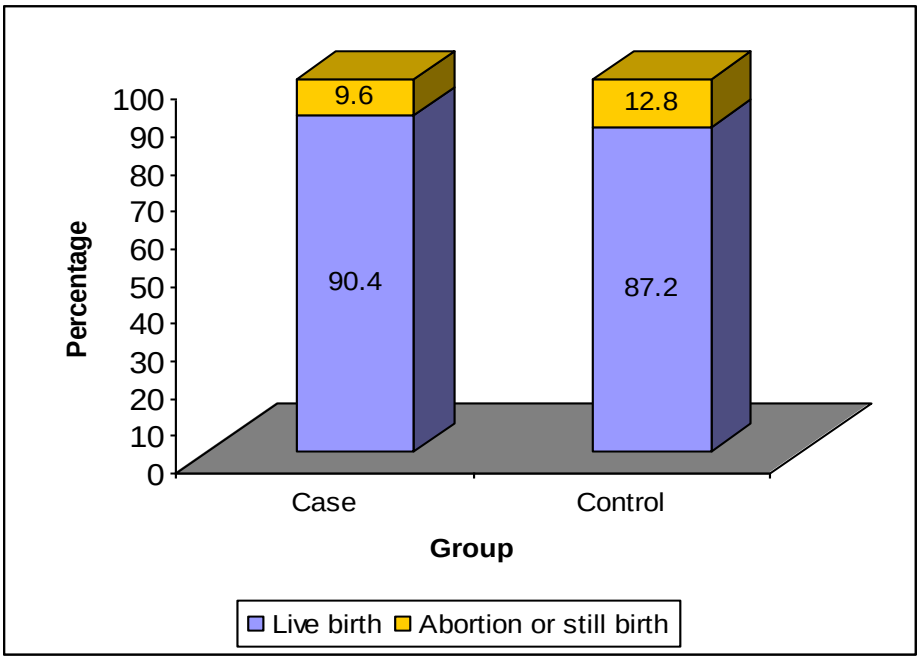

Fig. 1. Comparison of outcome of delivery between case and control groups

Table IV. Comparison of different types of natal complications

Natal complications	**Group**		**p-value**[#]	**Odds Ratio* (95% CI)**
	Case (n = 110)	Control (n = 218)		
Malpresentation	41(37.3)	63(28.9)	0.124	Not applicable
Obstructed labour	51(46.4)	76(34.9)	0.744	1.6(1.0 – 2.6)
Perineal tear	64(58.2)	94(43.3)	0.011	1.8(1.1 – 2.9)
Foetal distress	73(66.4)	140(64.2)	0.701	Not applicable

Data were analyzed using χ^2 **Test;** figures in the parentheses denote corresponding **%.**
***Odds Ratio** estimates the risk of developing an event in case group than to that in control group.

DISCUSSION

In our study, mean age of the case group was significantly less (17.4 ± 1.2 years) than that in the control group (18.2 ± 1.0 years) ($p < 0.001$). The results obtained above in the present study are in good agreement with the findings of Kanna *et al*. (2001)[11] who worked on risks and outcome in adolescent pregnant women in Eastern Nepal. They reported that in Nepal, girls are married off at a young age. The median age for marriage among girls was around 16 years. The educational status of index group was significantly lower than that of the control group. The income profile of the case group suggests that the adolescent pregnant women were comparatively disadvantaged group.

Many adolescents try to deliver at home and come to hospital only as a last resort, often late and with complications. Over 70% of the deliveries in the case group took place at home compared to 30.6% in the control group. A staggeringly low proportion of cases (6.2%) as opposed to controls (63%) utilized hospital as place of delivery. The results of mode of delivery of the present study indicated that more than 80% of the deliveries in the case group were normal vaginal delivery. Caesarean section was less common in the former group (18.6%) than that in the latter group (27.6%). Al-Ramahi and Saleh (2006) working on the outcome of adolescent pregnancy at a university hospital in Jordan also reported that adolescent pregnancies had a lower incidence of caesarean section and a higher incidence of spontaneous delivery than in adult pregnancies.

The health consequences of teenage pregnancy and childbirth in the present study shows remarkable similarity with the findings of the studies conducted in the United States, Canada, Britain, France and Sweden. In particular, results of studies conducted since 1970 have tended to indicate that the increased risk of maternal complications from pregnancy and delivery among teenagers – especially those older than 15 years is associated more with socio-economic factors than with the biological effects of age.

Pregnant mothers of the sweeper colony under the present study were found to be more prone to develop natal complications like obstructed labour and perineal tear than those of the general adolescent pregnant mothers. The likelihood of obstructed labour in the sweeper group was 1.6 times (95% CI = 1 – 2.6) higher than that in the general adolescent mothers. Sweepers were at nearly 2 times (1.1 – 2.9) higher risk of having perineal tear than that of general adolescent mothers. To investigate the differences in perinatal death and child mortality between different ethnic groups in the Netherlands, a retrospective analysis was performed on data collected between 1990 and 1993 in the national obstetric registry comprising 569743 births. The analysis revealed that Black mothers had the highest perinatal death rate compared with indigenous Dutch mothers (odds ratio 2.2). Hindustanis (West Indian Asians) had an odds ratio of 1.4 and Mediterraneans 1.3. The increased rate for black and Hindustani women could be fully explained by preterm birth. In the Mediterranean group the differences were explained by teenage pregnancy and socioeconomic status.

CONCLUSION

Obstructed labour and malpresentation are frequently common in adolescent pregnancy but marginalized pregnant women are more develop the complications than the pregnant of the general community.

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