

## Nutritional Status of Marginalized Adolescent Pregnant Women During Their Antenatal Period

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### ABSTRACT

**Background:** Despite pregnancy is a normal physiological event, every pregnant woman is at risk of developing complications. However, the risk is reported to be higher when it happens in an adolescent woman whose growth has not yet been completed and who belongs to a marginalized, poor, and nutritionally compromised community. The present study was undertaken to compare the nutritional status between marginalized adolescent pregnant women and adolescent pregnant women from the general population.

**Patients & methods:** This cross-sectional study was undertaken in a Sweeper Community (marginalized community) of Dhaka City and at Dhaka Medical College Hospital, Dhaka, Bangladesh over a period of two and a half years. Married women of sweeper community who conceived before completion of 19 years were considered as case, while adolescent pregnant women taken from Out-patient and In-patient Department of Gynae & Obstetrics were taken as control. A total of 333 subjects (114 cases and 219 controls) were selected consecutively.

**Result:** The mean age of the case group was significantly less (17.4 years) than that in the control group (18.2 years) ( $p < 0.001$ ). Respondents of the case group were less educated than those of the control group ( $p = 0.001$ ). Receiving antenatal care (ANC) from Maternal & Child Health (MCH) clinic was significantly less in the case group (15.8%) than that in the control group (33.3%) ( $p = 0.027$ ). The underweights (BMI  $< 18.5$  kg/m<sup>2</sup>) were relatively high in the case group compared to their control counterpart ( $p = 0.541$ ). Around two-thirds (66.1% in case group and 69.1% in the control group) of the subjects in either group suffered from anemia. However, poor maternal weight gain was significantly common in the former group than that in the latter group ( $p = 0.016$ ).

**Conclusion:** Adolescent pregnant women are usually nutritionally compromised resulting in underweight and anemia. But poor weight gain is more common in the marginalized adolescent pregnant women than that in the adolescent pregnant women of the general community.

**Key words:** Adolescent pregnant woman, sweeper, general population and nutritional status.

### INTRODUCTION

Having a baby is, perhaps, one of the most significant events in a woman's life. However, birth of a baby during adolescence is much more complicated and potentially hazardous than having a baby during adulthood.<sup>1</sup> In developing countries, adolescent pregnancy is more or less common and almost all these pregnancies occur among the poor. In Bangladesh, the adolescent fertility rate is one of the highest in the world

and the rate is more than 5 times higher than that in Sri Lanka.<sup>2</sup>

Within any society, childbearing among adolescents is the most common among the poor. As a result of poverty, these young mothers may be malnourished, a factor that contributes to poor pregnancy outcomes. In fact, in some countries, females- young and old alike - receive less food, or less nutritious food and lower quality health care than boys and men.<sup>1</sup> Pregnant

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adolescents are less likely than older pregnant women to obtain adequate prenatal care. A lack of prenatal care means that pregnancy-related complications, often present among young women, may not be identified and treated.<sup>3</sup> It is reported that pregnancy among adolescents is associated with maternal complications, premature birth, low birthweight, perinatal mortality and increased neonatal mortality.<sup>4</sup> Scholl and associates<sup>5</sup> in a meta-analysis and review of pregnancy complications in developing countries, observed that teenagers were at increased risk of maternal anemia, delivering pre-term low birthweight babies.

Like other countries of the world, Bangladesh also has different classes of people with distinct characteristics. Sweeper is one of the marginalized communities in our country who are generally uneducated, poor and neglected. They usually have bigger families owing to high fertility rate. Although they are poor and culturally backward, they have great contribution for the overall development of our country. They keep our environment clean where we can live in a hygienic condition. Assessing nutritional status of adolescent pregnant women of the sweeper community was, therefore, considered to be the best reflection of nutritional status of adolescent pregnant women in a marginalized community. This study was conducted to compare the nutritional status of adolescent pregnant women of sweeper community to that of general population.

## PATIENTS & METHODS

This cross-sectional study was conducted at Gonokuly Sweeper Colony, Hazaribag and in out-patient Department of Gynae & Obstetrics, Dhaka Medical College Hospital, Dhaka, Bangladesh over a period of two and a half years between January 2006 to July 2008. Married adolescent women of sweeper community who conceived before completion of 19 years of age were considered as case, while adolescent pregnant women taken from general population attending at outpatient Department of Gynae & Obstetrics, Dhaka Medical College Hospital,

Dhaka were the controls. A total of 333 subjects (114 cases and 219 controls) were selected consecutively. Data were collected on demographic characteristics, antenatal care, maternal nutritional status, Body Mass Index (BMI), anemia, maternal weight gain) and were analyzed using computer software SPSS (Statistical Package for Social Sciences) for windows, version 11.5. The test statistics employed to analyze the data were descriptive statistics, Chi-square ( $\chi^2$ ) or Fisher's Exact Probability Test. Level of significance was set at 0.05 and  $p < 0.05$  was considered significant.

## RESULT

About 45% of the subjects in the case group were less than 18 years old compared to 16.9% in the control group. The mean age of the case group was significantly less ( $17.4 \pm 1.2$  years) than that in the control group ( $18.2 \pm 1.0$  years) ( $p < 0.001$ ). In the case group, respondents were less educated than those in their control counterparts (70.2% vs. 85.4%,  $p = 0.001$  and 64.9% vs. 90.4%,  $p < 0.001$  respectively). Nearly three-quarter (72.8%) of the cases belonged to joint family compared to 50.7% of the control group ( $p < 0.001$ ) (Table I). Nearly 40% of the cases received ANC from skilled birth attendant (SBA) compared to 29.9% of the control

**TABLE I: Age distribution between case and control groups.**

Age (years)	Group		p-value
	Case (n=114)	Control (n=219)	
<18	51(44.7)	37(16.9)	
18-19	63(55.3)	182(83.1)	< 0.001
Mean±SD	17.4±1.2	18.2±1.0	
<b>Respondents' Education</b>			
Illiterate	34(29.8)	32(14.6)	0.001
Literate	80(70.2)	187(85.4)	
<b>Type of family</b>			
Nuclear	31(27.2)	108(49.3)	< 0.001
Joint	83(72.8)	111(50.7)	

#Data were analyzed using Chi-square ( $\chi^2$ ) Test; figures in the parentheses; Denote corresponding percentages.



group. Some 15.8% cases received antenatal care from MCH clinic as opposed to 33.3% of the controls ( $p = 0.027$ ) (Table II).

**TABLE II : Comparison of hospitals/clinics where ANC received.**

Places of ANC received#	Group		p-value
	Case (n=114)	Control (n=219)	
Medical college hospital	5(4.4)	3(1.3)	0.027
MCH Clinic	18(15.8)	73(33.3)	
Health worker	25(21.9)	42(19.1)	
SBA	45(39.5)	65(29.9)	
None	21(18.4)	36(16.4)	

#Data were analyzed using Chi-square ( $\chi^2$ ) Test; figures in the parentheses Denote corresponding percentages.

Around one-quarter of the respondents from either group informed that they received more food than usual. Comparison of nutritional status based on BMI demonstrates that case group had a slightly higher percentage of underweight (BMI < 18.5 kg/m<sup>2</sup>) compared to their control counterpart ( $p = 0.541$ ). Around two-thirds (66.1% in case group and 69.1% in the control group) of the subjects in either group suffered from anemia. Poor maternal weight gain was significantly common in the former group than that in the latter group (50.5% vs. 37.3%,  $p = 0.016$ ). (Table III).

**TABLE III : Comparison of nutritional status in terms of BMI.**

Food during pregnancy and nutritional status	Group		p-value
	Case (n=114)	Control (n=219)	
Received more food than usual	28(26.7)	54(25.8)	0.894
<b>BMI (kg/m<sup>2</sup>)</b>			
< 18.5	21(18.4)	34(15.5)	0.541
18.5-24.9	83(72.8)	155(70.8)	
≥ 25	10(8.8)	30(13.7)	
<b>Anemia</b>	72(66.1)	150(69.1)	0.330
<b>Maternal weight gain</b>	55(50.5)	81(37.3)	0.016

#Data were analyzed using Chi-square ( $\chi^2$ ) Test; figures in the parentheses Denote corresponding percentages.

## DISCUSSION

Over the last two decades or so, there has been an increasing interest in adolescents throughout the world. Adolescents and youth in Bangladesh are particularly vulnerable to health risks, especially in the area of reproductive health and nutrition, particularly if they belong to marginalized community. This is due to their lack of access to information and services and societal pressure to perform as adults notwithstanding the physical, mental and emotional changes they are undergoing.<sup>6</sup>

The findings of the present study demonstrates that the adolescent pregnant women from sweeper community were relatively young (mean age 17.4 years) and less educated than those from general population (mean age 18.2 years). Marginalized group was comparatively poor in terms of monthly family income which is in good agreement with the findings of Kanna *et al.*<sup>7</sup> who worked on risks and outcome in adolescent pregnant women in Eastern Nepal.

The sweeper group usually received ANC services from the skilled birth attendants, while the pregnant adolescents generally received ANC from MCH clinics. In terms of quality ANC services, the latter group made right choice. The above results are almost similar to that reported by Mulgaonkar<sup>8</sup> in neighboring India who worked on the reproductive health of women in urban slums of Bombay. He reported that among mothers less than 20 years, only 7% received antenatal care from a health worker or professional and 41.6% are assisted at delivery by a skilled birth attendant (SBA). Adolescents rarely gain access to adequate quality ANC. If they ever go for ANC, they often start very late in pregnancy and have fewer attendances. Socio-economic factors further influence the benefits adolescents may gain from ANC. Those coming from low socio-economic status can less likely afford prescribed medications or laboratory tests thus delaying or obscuring appropriate interventions.<sup>9</sup>

In the present study, the nutritional statuses of adolescent mothers were calculated in terms of BMI, anemia and weight gain during pregnancy.



Comparison of nutritional status based on BMI demonstrated that case group had a slightly higher percentage of underweight compared to their control counterpart indicating their risk of developing detrimental impact of low BMIs on neonatal outcome. The detrimental impact of low BMIs on foetal outcome of teenage and adolescent mothers is true in both developed and developing countries. Since the incidence of low birth weight is higher among all mothers with a low BMI status the combination of a low BMI and adolescence is likely to increase the chances of having a low birth weight infant.<sup>10</sup> A study by Sibert *et al*<sup>11</sup> in South India have shown that maternal nutritional status, in particular energy stores reflected in skinfold thicknesses, were positively correlated with low birth weight, decreased length and deficient fat folds in infants.

The risk of low birth weight is particularly acute in adolescent girl who are still growing at the time of conception. There is increasing evidence of competition for nutrients between the growing pregnant adolescent and her fetus.<sup>12</sup> Many adolescents become mothers even before knowing what it entails for them. Many studies showed that early marriage can cause severe health risks for themselves and also for their child. In the present study, less gain in weight were significantly common among the sweepers than those among the adolescent pregnant mothers from the general population which are fairly consistent with the findings of Alam.<sup>13</sup>

## CONCLUSION

From the findings of the study and discussion thereof the study concluded that if a woman becomes pregnant during her adolescence, birth can be dangerous for both mother and baby. Because of competition for nutrients between the growing pregnant adolescent and her fetus, both the mother and the fetus may be nutritionally compromised resulting in underweight and anemia on the part of the mother and intrauterine growth retardation (IUGR) with its possible consequences on the part of the fetus. Besides incomplete skeletal growth of pelvis she

may suffer from prolonged or obstructed labor. As all these undernutrition-related maternal and fetal complications are more pronounced when it happens in a marginalized community like sweeper, it is imperative that government would put all out efforts to create an environment that will prevent adolescent pregnancy and improve the nutritional status of adolescents.

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