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# Pregnancy Outcomes of Adolescent Primigravida Compared to Non-Adolescents Primigravida Delivering at Bagamoyo District Hospital

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**Abstract:** ***Adolescent pregnancy is among the leading cause of deaths in women 19 years and below. Multiple factors including culture, religion, educational, low level of sexual and reproductive health, contribute to increase in adolescent pregnancy. Objectives: The aim of this study was to compare antenatal, intrapartum, and postpartum complications between adolescent primigravida and non adolescent primigravida who delivered at Bagamoyo district hospital. Methodology: A analytical cross sectional study from 1st August 2017 to 31st January 2018 done. Obstetric outcomes in term of Post partum Hemorrhage, Anterpartum Hemorrhage, eclampsia, pre-eclampsia, anemia, mode of delivery, abnormal labor, low birth weight, low apgar score and congenital anomalies of the fetus were compared. Results: During the study period, there were 1440 deliveries. Out of these, primigravida were 230. 153 adolescent primigravida and 77 non adolescent primigravida were involved in the study. Mean age for adolescent was 17.92±1.84 and non adolescent was 23.84±3.69. The proportions of prolonged labor were 6.5% and 1.3% in non adolescent and adolescent primigravida, and anaemia was 37.7% and 19.0% with the p value 0.03 and 0.001. Conclusion; There is increase number of adolescent primigravida deliveries at Bagamoyo district hospital compared to non adolescent pregnant women. Prolonged labor and anemia were found to be higher in non adolescent primigravida women.***

**Keywords:** adolescent primigravida, non adolescent primigravida, Obstetric outcomes

## 1. Introduction

### Background

Adolescence is a period between 10-19 years (1), whereby an individual progress from point of initial appearance of secondary sexual characteristics to that of fully sexual maturity.Age of the mother is one of the important factors in outcome of the pregnancy especially to those 15 years and below. Complications during pregnancy and child birth are the second leading cause of death in 15-19 years old female globally(1)(2). Adolescence mothers are highly risk group which contributes to adverse obstetrics outcome including increase of maternal and perinatal morbidity and mortality(3)(4). Adolescents give birth to around 16 millions babies every year worldwide and more than 90% of these births occurs in middle income countries(5). In poorest regions of the world over, one in three adolescent become pregnant (6). In Tanzania proportion of adolescent pregnancy is 27% (2), and the prevalence of adolescent child bearing is high (2). The coastal regions where the district of Bagamoyo is located, is among the top 10 regions with high Prevalence of adolescent childbearing.

There are several factors which influence the increase of adolescence pregnancies. These factors are inadequate knowledge of sexual and reproductive health education among adolescents, inadequate access to reproductive services, poverty, early sexual debut, single parent which leads to poor upbringing, attending of initiation rites at early age, negative culture and belief toward utilization of sexual and reproductive health services (7).

## 2. Materials and Methods

### Study design

This was a hospital based analytical cross sectional study.

### Study duration

Data collection took six months, from 1st August 2017 to 31st January 2018.

### Study area

Bagamoyo district hospital, is located in Bagamoyo district, which is 75 km (45miles) from Dar es salaam, and has a population of 95,236. It provides health services to people from Bagamoyo and bordering villages of Dar es salaam, Islands of Pemba and Unguja, Tanga and Morogoro, the hospital has six admitting wards with bed capacity of 110. There is one labor ward with three delivery beds and two operating theatres. The labor ward hospital staff include the followings: one Medical officer, two Assistant medical officers, seventeen trained nurses, and 2 Nurse assistants. The antenatal clinic staffs are two Medical officers, one Assistant medical officer, one Clinical officer, 12 trained nurses, and one Medical attendant.

### Study population.

All pregnant women delivered at Bagamoyo district hospital during the period of the study.

### Study sample

All adolescent primigravida and non adolescent primi gravida delivered at Bagamoyo district hospital during the study.

**Inclusion criteria**
All primigravida women.
**Exclusive criteria**
Primi gravida with pre-existing chronic disease that may interfere with pregnancy outcome such as diabetes and sickle cell disease because they are already sick thus making it difficult to conclude if the complications are due to their age or the chronic illness.

**Ethical clearance**
The ethical clearance for the study was obtained from the Senate Research and Publication Committee for Muhimbili University of Health and Allied Sciences (MUHAS). Permission to conduct the study was obtained from the Bagamoyo district executive director (DED), the District Medical Officer and from the medical officer in charge of the hospital.

**Ethical issues**
Written informed consent was obtained from the participants after being properly informed about the purpose of the study. Participants were informed on the risks and benefits of participating in the study. There were almost no health risks that associated with participating in this study and the participantswere having a right to withdraw from the study at any time they wish. All the participants' information was kept confidential by using codes

## 3. Results

During the study period, there were 1440 deliveries. Out of these primigravida deliveries were **230.** Among these, 153(66.5%) adolescent primigravida and 77(33.5%) non adolescent primigravida were involved in the study.

Maternal socio demographic and obstetric characteristics among adolescent and non adolescent primigravida

| **Parameters** | Adolescent (n=153) | Non Adolescent (n=77) |
|---|---|---|
| **Maternal age** | | |
| Mean age | 17.92 (SD 1.84) | 23.84 (SD 3.69) |
| **Marital status** | | |
| Single/Divorced/separated | 57 (37.2%) | 6(7.8%) |
| Married | 96 (62.7%) | 71(92.2%) |
| **Educational level** | | |
| No formal education | 29 (19.0 %) | 11(14.3%) |
| Primary education | 111 (72.5%) | 38(49.4%) |
| Secondary school and above | 13 (8.5%) | 28(36.4%) |
| **Occupation** | | |
| Self employed | 73 (47.7%) | 12(15.6%) |
| Employed | 39 (25.5%) | 55(71.4%) |
| Housewife | 41 (26.8%) | 10(13.0%) |
| **Residence** | | |
| Urban | 70 (45.7%) | 44(57.1%) |
| Rural | 83 (54.2%) | 33(28.4%) |
| **ANC frequency** | | |
| <4 visits | 41 (26.8%) | 17(22.1%) |
| 4 visits and above | 112 (73.2%) | 60(77.9%) |

Mean age for adolescent was 17.92±1.84. Majority of non adolescent were having primary school education (72.5%) compared to non adolescent primigravida (49.4%) while more of non adolescent primigravida were having a secondary education.

**Maternal outcomes**

**Table 2:** Distribution of maternal outcome among primigravida adolescent and primigravida non adolescent

| Maternal outcomes | Adolescent (n=153) | Non adolescent (n=77) | P value |
|---|---|---|---|
| **Mode of delivery** | | | |
| Vaginal delivery | 123 (80.4%) | 62(80.5%) | 0.98 |
| Caesarian section | 30(19.6%) | 15(19.5%) | |
| **Anemia** | | | |
| Yes | 29 (19.0%) | 29 (37.7%) | >0.001 |
| No | 124 (81.0%) | 58(75.3%) | |
| **APH** | | | |
| Yes | 7 (4.6%) | 2 (2.6%) | 0.46 |
| No | 146 (95.4%) | 75 (97.4%) | |
| **PPH** | | | |
| Yes | 3 (2.0%) | 1 (1.3%) | 0.71 |
| No | 150 (66.4%) | 76 (98.7%) | |
| **Hypertensive disorders** | | | |
| Yes | 7(4.6%) | 4(5.2%) | 0.85 |
| No | 146 (95.4%) | 73 (94.8%) | |
| **Prolong labor** | | | |
| Yes | 2 (1.3%) | 5 (6.5%) | 0.03 |
| No | 151 (98.7%) | 72 (93.5%) | |
| **Obstructed labor** | | | |
| Yes | 7 (4.6%) | 4 (5.2%) | 0.83 |
| No | 146 (95.4%) | 73 (94.8%) | |

Anemia and prolonged labor was found to be higher in non adolescent primigravida with p value of 0.001 and 0.03.

**Fetal outcomes**

**Table 3:** Distribution of fetal outcome among primigravida adolescent and primigravida non adolescent

| Fetal outcomes | Adolescent, n=153 | Non adolescent, N=77 | P value |
|---|---|---|---|
| **Birth weight** | | | |
| < 2.5kg | 31 (20.3%) | 19 (24.7%) | 0.44 |
| ≥2.5kg | 122 (79.7%) | 58 (75.7%) | |
| **Apgar score at 5th minute** | | | |
| < 7 | 12 (7.8%) | 5 (6.5%) | 0.71 |
| ≥7 | 141 (92.2%) | 72 (93.5%) | |
| **Congenital anomalies** | | | |
| Yes | 5(3.3%) | 2(2.6%) | 0.78 |
| No | 148 (96.7%) | 75 (97.4%) | |
| **Birth status** | | | |
| Alive | 148 (96.7%) | 74 (96.1%) | 0.41 |
| SBM | 3(2.0%) | 3 (3.9%) | |
| SBF | 2(1.3%) | 0 (0.0%) | |
| **Birth asphyxia** | | | |
| Yes | 6(3.9.%) | 0(0.0%) | 0.07 |
| No | 147 (96.1%) | 77(100%) | |
| **Prematurity** | | | |
| Yes | 2 (1.3%) | 0(0.0) | 0.31 |
| No | 151 (98.7% | 77(100%) | |
| **Small for gestation age** | | | |
| Yes | 2(1.3%) | 1(1.3%) | 0.99 |
| No | 151 (98.7%) | 76(98.7%) | |
| **Neonatal sepsis** | | | |
| Yes | 1(0.7%) | 0(0.0%) | 0.47 |
| No | 152 (99.3%) | 77(100%) | |

There was no statistically significant difference among fetal outcome.

## 4. Discussion

The proportion of adolescent primigravida women at Bagamoyo hospital was high compared to non adolescent which indicates that there are more deliveries in adolescent compared to non adolescent women. This study shows an increased number of prolonged labor and anemia in non adolescent primigravida women. This is different from others studies in developing regions of the world such as India and Pakistan where complications occurred mostly in adolescent primigravida(8). The average age of adolescent in this study was 17.92 (SD 1.84) and this shows that most of the adolescent studied were between seventeen to eighteen years during which time complications are less common as compared to those at the age of fifteen and below, and this is supported from a study in India (9). This could also account for the differences. As per protocol in Tanzania, non primigravida with anticipated complication are encourage to deliver in the district hospital. Therefore, the difference seen in this study could also be that most of the non primigravida women delivering at the hospital may have been those with complications referred from the lower facilities.

This study also found that most of non-adolescent primigravida women attained secondary education and above as compare to adolescents women. Low level of education leads to poor decision making about a woman well-being, This could be a factor that cause the increased adolescent pregnancy, and is consistent with other studies in Africa and India(10)(11)**.** It could also be that majority of adolescent girls are not joining secondary school or they drop from school earlier due to some reasons including pregnancy(12). About two-third of adolescent primigravida were married in this study. Their early marriage may have contributed significantly to the high number of adolescent pregnancy which is supported by studies from other developing countries (13).

There was no statistically significant difference in fetal outcome between adolescent primi gravida and non adolescent primi gravida in this study. The reason could also be that the ages of most of the adolescents were very close to that of non adolescents as indicated by the mean age of the adolescent and non-adolescentprima gravida women in this study.

## 5. Conclusion

There is increase number of adolescent primigravida deliveries at Bagamoyo district hospital. Prolonged labor and anemia were found to be higher in non adolescent primigravida than adolescent primigravida women**.**

## 6. Recommendation

1) To reduce adolescent pregnancy, sexual and reproductive health should be taught from primary school with involvement of parents, community and religious leaders.
2) The government and stakeholder should conduct massive awareness among parents, community leaders and youth to discourage early marriage.

**Study Limitation and Strengths**

Most of adolescent in this study were between the ages from 17 to 18 years because these were the participants that were available during the study. Thus, the younger adolescent below the age of 15 years who are prone to more adverse pregnancy outcome were not there.

The strength of this study was that the principle investigator and the research assistants were able to interview and take a proper history from the study participants.

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**Competing Interests:** The author declare that they have no competing interest

**Author's contribution:** The authors contributed equally towards the accomplishment of this work and have all read and approved the final version of the manuscript.

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