

BIRTH OUTCOMES IDENTIFYING ASSOCIATIONS BETWEEN OBSTETRIC OUTCOMES AND SOCIO-DEMOGRAPHIC CHARACTERISTICS OF WOMEN PRESENTING FOR DELIVERIES IN 2018 AT NYALA TEACHING HOSPITALEkram Adam Eldoom^{1*}, Rehab Mohammed Issa Alsmami² and Khalid Mohammed Awadelkareem³¹Faculty of Public Health University of Alzheim Alazhari/ Sudan.²Ministry of Health South Darfur State Nyala.³WHO Nyala Office.***Corresponding Author: Ekram Adam Eldoom**

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Article Received on 08/10/2018

Article Revised on 29/10/2018

Article Accepted on 19/11/2018

ABSTRACT

This is a descriptive cross sectional study conducted to investigate Birth Outcomes- Identifying associations between obstetric outcomes and socio-demographic characteristics of women presenting for deliveries in 2018 at Nyala Teaching Hospital. As well as reason that leads women to deliver at home. This study population was women at reproductive aged (15-49) years old total coverage attended in hospital during collected data. **Objective:** To investigate associations between obstetric outcomes and socio-demographic characteristics of women presenting for deliveries. **Materials and Methods:** An expolornary descriptive-cross-sectional study designed to investigate Birth Outcomes. **Result:** In this study, we examined the relationship between sociodemographic and birth outcome. Total 25 women, only 8(32%) had experienced low birth weight outcome. It also shows that there was statistically significant association observed between the age, living area, and education level. **Conclusion:** Poor outcome of birth was maximum in house low income, women who were had low level of education, and women delivered for first time, women who were delivered at age of (15-49) years old and women who gave history of obstetric.

KEYWORDS: Obstetric, demographic, reproductive, fertility rates, birthweight, neighbourhood.**INTRODUCTION**

During the twentieth century the maternal mortality ratios are decreased in a developed country but, in developing country it is still surfing from high numbers of maternal death, also, maybe the pregnancy well be dangers for the women in these countries.^[1]

Globally, 7.6 million children die each year from preventable causes, and of these, about 40% die in the neonatal period. The vast majority of these deaths are in low- and middle-income countries such as Sub-Saharan Africa and most of them occur at home.^[2]

The burden of adverse pregnancy outcomes (APOs), which includes both preterm births, abortions and low birth weights is substantial in both developed and developing countries. More than 60% of preterm births take place in South Asia and sub-Saharan Africa. A recent study estimated that 12.8 million babies were born small for gestational age in India alone in the year 2010, a prevalence of 47% of all births.^[1]

The causes of neonatal mortality vary between (and within) countries. There is a scarcity of information

about the direct causes of neonatal deaths in low-income communities; population-based information in these settings is largely dependent on verbal reports of autopsies of variable quality. Global estimates are only possible through statistical modeling.

Sudan is classified as having made insufficient progress to achieve MDG-4. The current infant mortality rate is 60 per 1,000 live births and the under-five mortality rate is 82 deaths per 1,000 live births. The neonatal mortality rate is also high ranging from 34 to 47 per 1,000 births.^[2]

Darfur region affected by war since 2003, South Darfur one of the five Darfur's affected by this war, because of that war the distribution of the population was affected and also the health service disrupted.

During the war, an increased rate of perinatal mortality and preterm deliveries due to inadequate nutrition, stress factors and break down of the perinatal care system.^[3]

In South Darfur there are around 347 health facilities and 14 hospitals provide the reproductive health services to 3986154 total state population, 24% of total population

are women at RH age (956677), 6% of total population (based on CBR of 6) are expected pregnancies/deliveries (239169). A total of 194,130 women were covered with ANC out of 717,508 women with 27% achieved during 2017, Total 32,318 deliveries were attended by skill personal during 2017, with 14% achievement out of the target 239170, Out of 32,318 total of 19,554 deliveries were conducted at home and 12,764 were conducted at health facility, 58% home delivery and 42% health facility delivery.^[4]

Multiple factors may be associated with increase in PTB, among them, socio demographics changes in maternal population such as increased maternal age and delayed primiparity. Nevertheless, sociodemographic characteristics of women, as age, parity, marital status, age at first delivery and fertility rates, often have been the object of study by economists and demographers. Few studies has addressed their impact on obstetrical and perinatal outcomes, among them, researches in France (Unité 953 of INSERM) since 70's, have reported that certain maternal conditions could affect maternal risk and could be associated with higher rates of preterm birth, with low birth weight and with fetal growth restriction. Consequently, sociodemographic factors have been evaluated since 70's through periodic surveys which monitor maternal and perinatal health.^[5] Birth outcomes are a category of measures that describe health at birth. These outcomes, such as low birthweight (LBW), represent a child's current and future morbidity — or whether a child has a “healthy start” — and serve as a health outcome related to maternal health risk.

Birth outcomes were defined according to the four following measures of delivery and infant health: Birth weight, gestational age at delivery, and delivery complications. Birth weight and gestational age were chosen as specific measures based on their recorded association with long term health implications.

Income and Birth Outcomes

Income is an important indicator because it influences how much opportunity people have to meet their daily needs, income interacts with social infrastructure and influence health.^[6] Low neighbourhood income was associated with a moderately higher risk of preterm birth, low birthweight, and full-term low birthweight. The neighbourhood income gradient was less pronounced among recent immigrants compared with longer-term residents. Recent immigration was associated with a lower risk of preterm birth, but a higher risk of low birthweight and full-term low birthweight.^[7]

Living in disadvantaged neighborhoods has been associated with a wide range of poor health outcomes in general, and higher risks of preterm birth, low birth weight, and infant mortality in particular; moreover, the effects appear independent of individual-level socioeconomic characteristics. However, virtually all previous studies on disparities in birth outcomes by

neighborhood socioeconomic measures have been cross-sectional and limited to a single birth outcome such as infant mortality or low birth weight. The overall patterns of birth outcomes by neighborhood socioeconomic status remain uncharted, as do changes in these patterns over time. In addition, studies on birth outcomes by neighborhood socioeconomic status have been limited to urban areas with little or no information available on these disparities in rural areas.^[8]

Education and Adverse Birth Outcomes

Education is the most commonly used indicator, Education impacts health such that well educated people tend to have better physical and mental health than poorly educated people. One way by which education can influence health is through its impact on occupation and income.^[6] Low levels of maternal education have been clearly associated with adverse birth outcomes such as preterm birth and low birth weight. While education is only one risk factor—alongside other critical factors such as maternal age, birth order and spacing, multiple pregnancies, body weight, chronic disease, mental health, infectious diseases, health risk behaviors such as smoking, intimate partner violence, and access to screening and health services, it matters, because education enables girls and women to make informed decisions about their reproductive health and interactions with the healthcare system.^[9] Even in developed countries, mothers in unfavorable socioeconomic status and with low education level present greater vulnerability to having LBW children.^[10]

Living area and Birth outcome

Birth outcomes including birthweight and preterm birth have been shown to be associated with a variety of health outcomes, cognitive development, educational attainment and psychiatric disorders. These birth outcomes have also been shown to be associated with a range of social, environmental and health factors including social class, smoking and drinking and ethnicity.

There is growing evidence that the neighbourhoods in which individuals live may exert independent effects for health more generally and adverse birth outcomes more specifically. Furthermore, a growing literature has developed in environmental epidemiology which has shown that ambient background levels of pollutants such as nitrogen dioxide, particulate matter less than microns and sulphur dioxide have all been linked to increased risks of low and very low birth weight and preterm babies as well as lower mean birth weight.^[11]

The World Health Organization (WHO) defined low birth weight (LBW) as BW below 2,500gm. In India 85% of neonatal mortality is associated with LBW, 87% in Guatemala and 56% in North Acrot. It is estimated worldwide that 25 million LBW infants were born in 1990, making up to 18% of all live births, 90% of which occurs in developing countries.

Low birth weight babies are at the greatest risk in early childhood and BW below 2.5kg reflects intrauterine malnutrition involving micro-nutrient deficiencies, infections such as malaria and syphilis, and maternal malnutrition. This practical cut-off for international comparison is based on epidemiological observations that infants weighing less than 2,500g are approximately 20 times more likely to die than heavier babies. More common in developing than developed countries, a birth weight below 2,500g contributes to a range of poor health outcomes. While low birth weight continues to be useful in focusing attention on a healthy start to independent life, it has also become increasingly evident that the cut-off value of 2,500g may not be appropriate for all settings. Some countries with high incidence of low birth weight do not necessarily have high mortality rates.

In developing countries, it is estimated that more than half (58%) of the babies are not weighed at birth, with this proportion being highest in South Asia (74%) and sub-Saharan Africa (65%) respectively. The highest proportions of infants who are weighed are in Latin America and the Caribbean (only 17% not weighed) and in Central and Eastern Europe and the Commonwealth of Independent States (21% not weighed). These data indicate that not all babies born with the assistance of skilled health personnel are weighed or have their weights recorded. For comparison, 58% of babies in the developing world are born with a skilled attendant at delivery while on the whole; only 42% are weighed.

The incidence of LBW is a powerful indicator of infant survival, and indirectly of the mother's nutritional status. In Nigeria, the average prevalence of LBW is estimated to be about 16%, with a range of 6-21%. LBW newborns in the low socio-economic groups of developing countries are major problems for public health services. The immediate consequences are higher morbidity and mortality rates in the perinatal and neonatal periods. The late consequences may include prolonged impairment of immunological defense mechanisms, and neurological sequelae, which interfere with the normal development of the child and, on a national level, are serious obstacles to development. Maternal morbidity during pregnancy is highly prevalent in the low socio-economic groups.

Studying the determinants of birth weight is important for both public and clinical perspectives. Such information would be crucial in understanding the secular trends and changes in the socio-economic status of people; which could influence the BW of infants. In this regard, the present study was designed to examine the socio-demographic variables affecting the BW of the newborn in urban Abeokuta, Nigeria, information regarding which is lacking.^[12]

METHODOLOGY

Study Design: An exploratory descriptive-cross-sectional study designed to investigate Birth Outcomes in Nyala teaching hospital and identifying associations between obstetric outcomes and socio-demographic characteristics of women presenting for deliveries in 2018 and ways of improving outcome.

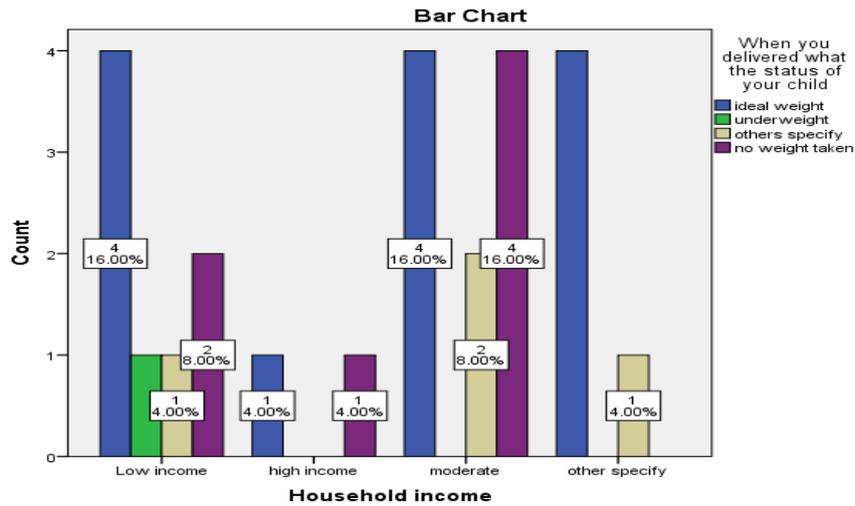
Study Population: Women at reproductive age (15-49) who presenting for deliveries at Nyala teaching hospital during the data collection.

Sample Size: Total coverage during Three days from 22-24 April 2018 for women at reproductive age (15 – 49) the inclusion criteria were age/area based while the exclusion criteria were for women are younger than 15 years old and older than 49 years old.

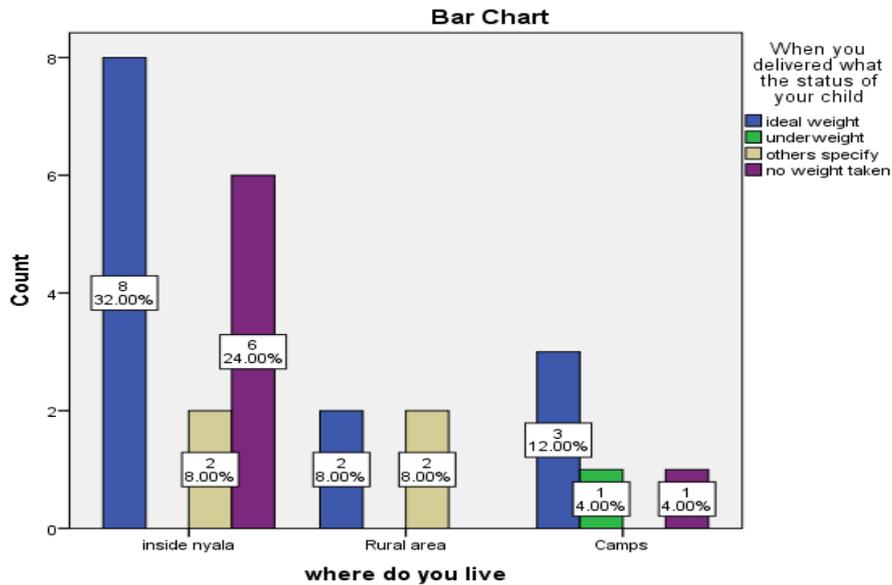
RESULT

This study covered all women delivered in Nyala teaching hospital during three days, by questioner interview. Total 25 women, 8(32%) had experienced low birth weight outcome. Low house income of study subjects is reflected in graph 1. It also shows that there was statistically significant association observed between the age, living area, education level, first time of delivery, and no significant association was observed with visiting to ANC, distance from the health services, and place of delivery. Of the 25 cases studied, 8(32%) women were within (26-35) years of age. Only of subjects (20%) were coming from camps and majority of women, 16 (64%), were from inside Nyala. Low birth outcome was showed clearly in education level and women came from the camps also in the low household income.

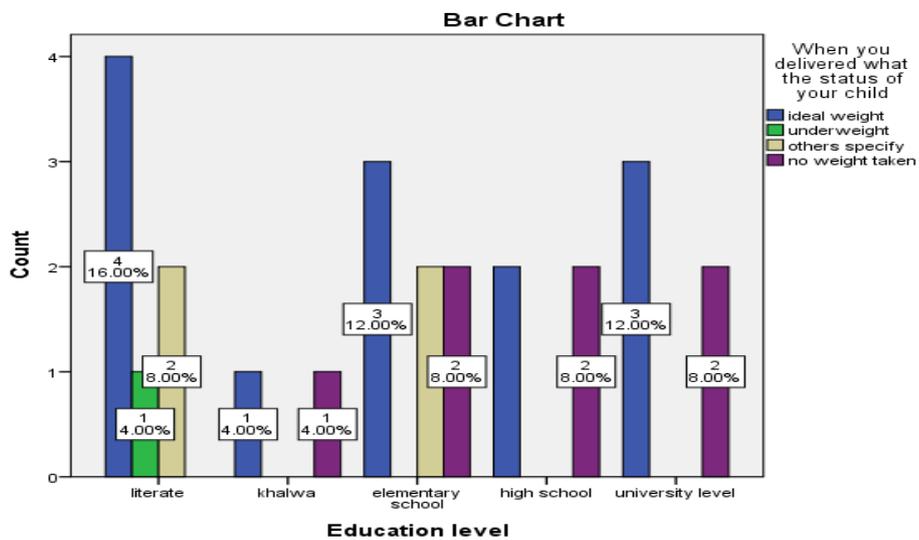
After analysis, highly significant association of birth outcome was observed within education, living area, socioeconomic status, age, and no significant association was observed with distance from health services and visiting to ANC. All that showing in the tables below.



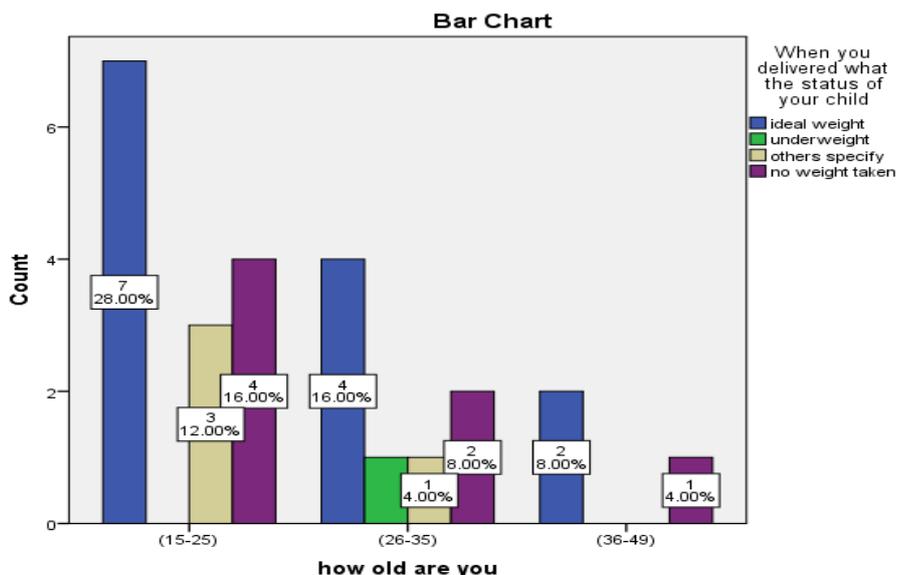
Graph 1: Show the household income associate with the birth outcome.



Graph 2: Showing the association between living area and birth outcome.



Graph 3: Showing the association between level of education and birth outcome.



Graph 4: Showing the association between age and birth outcome.

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------------------------------------|----|---------|---------|------|----------------|
| How many children do you have(Girls) | 20 | 1 | 5 | 1.70 | 1.129 |
| How many children do you have(Boys) | 16 | 1 | 4 | 1.63 | .957 |
| How many children do you have(Total) | 24 | 1 | 7 | 2.50 | 1.934 |
| Valid N (listwise) | 12 | | | | |

Table (1): How old are you.

| | | Frequency | Percent % | Valid Percent | Cumulative Percent |
|-------|---------|-----------|-----------|---------------|--------------------|
| Valid | (15-25) | 14 | 56.0% | 56.0 | 56.0 |
| | (26-35) | 8 | 32.0% | 32.0 | 88.0 |
| | (36-49) | 3 | 12.0% | 12.0 | 100.0 |
| | Total | 25 | 100.0% | 100.0 | |

The result shown in table (1) women in group (15-25 yrs. – 56%) are high fertile rate, if we consider the Sudan law for the age of adult it says 18 years which means early married for girl still practice in some area of Sudan and there is strong association between obstetric delivery and age.

Table (2): Where do you live.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | inside Nyala | 16 | 64% | 64.0 | 64.0 |
| | Rural area | 4 | 16% | 16.0 | 80.0 |
| | Camps | 5 | 20% | 20.0 | 100.0 |
| | Total | 25 | 100% | 100.0 | |

As shown in table (2) more than two third (16) -64%) residence inside Nyala from different areas closely for health services, in addition (4)-16%) of residence from rural areas and (5)-20%) from camps they characterized by low socio-economic status and bad health services in their areas.

Table (3): Education level.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | literate | 7 | 28.0 | 28.0 | 28.0 |
| | khalwa | 2 | 8.0 | 8.0 | 36.0 |
| | elementary school | 7 | 28.0 | 28.0 | 64.0 |
| | high school | 4 | 16.0 | 16.0 | 80.0 |
| | university level | 5 | 20.0 | 20.0 | 100.0 |
| | Total | 25 | 100.0 | 100.0 | |

The above table (3) shows that the half of the respondent were literate and elementary school levels, (7)-28%). this indicate there is no association between birth outcome and level of education. followed by (5-20%) of women were having university level.

Table (4): Are you employed.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | yes | 1 | 4.0 | 4.0 | 4.0 |
| | No | 24 | 96.0 | 96.0 | 100.0 |
| | Total | 25 | 100.0 | 100.0 | |

In this table (4) almost women (24)-96%) were housewife /unemployed expect (1) which indicate they do not have independent income and choices.

Table (5): Household income.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Low income | 8 | 32.0 | 32.0 | 32.0 |
| | high income | 2 | 8.0 | 8.0 | 40.0 |
| | moderate | 10 | 40.0 | 40.0 | 80.0 |
| | other specify | 5 | 20.0 | 20.0 | 100.0 |
| | Total | 25 | 100.0 | 100.0 | |

As shown in the above table (5) less than half of respondent was had moderate income which indicate the relation between income and area of living.

Table (6): Marital status.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------|-----------|---------|---------------|--------------------|
| Valid | Married | 25 | 100.0 | 100.0 | 100.0 |

Table (6) Shows that all women were marriage (25-100%) that indicate they independent from husband.

DISCUSSION

In this cross sectional study, we examined the relationship between socio-demographic and birth outcome. Total 25 women, 8(32%) had experienced low birth weight outcome. Low house income of study. It also shows that there was statistically significant association observed between the age, living area, education level, first time of delivery, and no significant association was observed with visiting to ANC, distance from the health services, and area of delivery.

The age of mother was statistically significant similar findings stated by Jayashree *et al.*, (2016). Advance maternal age is associated with increased risk of delivered low birth weight. Education was significantly associated with birth outcome which corroborates with finding of previous studies by Emily *et al.*, (2016), This is quite understandable as educational attainment has been established as a social variable that often displays the largest socioeconomic influence because it affects both income and occupation. Educated women are also more likely to understand public-health message. Living in the camps also one of the risk factor to the birth outcome in this study similar to previous mentioned by Tom *et al.*,(2017). In this study also found that low socioeconomic status had significant association with obstetric birth outcome supporting the findings of Urquia *et al.*,(2007) study.

CONCLUSION AND RECOMMENDATION

The purpose of this study was to know Birth Outcomes in Nyala teaching hospital and identifying associations between obstetric outcomes and socio-demographic

characteristics of women presenting for deliveries in 2018 at Nyala Teaching Hospital of interaction between the various socio-demographic characteristics and birth outcomes in the Nyala teaching hospital. Based on the interpretation of our findings, it has been discovered that, there is significant association between birth outcomes and sociodemographic factors ranging from economic status of delivered women and their household income, aging, level of education, place of residence, etc. Socio-demographic factors most seem to play role in birth outcome. I recommended that the improvement in socioeconomic condition and raise awareness among women will ensure healthy mother and healthy baby at the end of each pregnancy.

ACKNOWLEDGMENT

We would like to express our deepest gratitude and appreciation to Dr. Abaker for the guidance support and staff of Nyala teaching hospital.

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