



# Policy Brief

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## **Policy Brief on Botswana Study – Reproductive Health, Economic Growth & Poverty Reduction**

**By**

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### **Section 1: Problem investigated and the issues**

This study investigated the determinants of birth weight in Botswana. Birth weight as an indicator of the outcome of reproductive health is critical for social, economic and human development. Reproductive health is a reflection of health during childhood, and crucial during adolescence and adulthood, sets the stage for health beyond the reproductive years for both women and men, and affects the health of the next generation. The key motivation of the study was to get a clear understanding of the factors that influence the birth weight of newly born babies with a view to inform policy.

### **Section 2: Method of analysis**

The study used two methodological approaches: the quantitative and qualitative. The quantitative approach investigated the determinants of birth weight, while the qualitative approach investigated the link between reproductive health and household welfare.

#### **2.1 The Quantitative Approach**

The study estimated the determinants of birth weight in Botswana using the instrumental variable (IV) model to jointly estimate the demand for tetanus immunization and the birth weight production function using the Botswana Family Health Survey (BFHS)<sup>1</sup> data set for 1996 collected by Central Statistics Office (CSO).

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<sup>1</sup>The Botswana Health Survey 1996 data set captured most of the variables that were pertinent to the study, which were not in the most recent surveys

Birth weight is a good indicator of health of the child in the womb because the weight is taken immediately after birth. Hence a malnourished fetus will be born at low birth weight. The key determinants of birth weight include nutritional status and age of the mother, mother's immunization against preventable diseases and behavioural change during pregnancy. Other factors such as areas of residence, which are proxies of availability of health care and nutrients, also affect the health of the child in the uterus.

Immunization against tetanus during pregnancy is used as a proxy for antenatal care services received by the mother. Immunization against tetanus is further assumed to be complementary to other inputs that improve the health of the child in the womb, such as presumptive malaria treatment and avoidance of risky behaviours. By implication, the adoption of a specific behaviour or the uptake of a specific input improves health, creates incentives to engage in other health-augmenting behaviours or consumption that improve birth weight.

## **2.2 The Qualitative Approach**

The qualitative data was generated from four focus group discussions in Gaborone city, Tlokweng and Mogoditshane. The participants in the focus group discussions were selected on the basis of their experience in child bearing and participation in antenatal services. Local leaders helped to identify suitable participants for the discussions. For purposes of ethical considerations, participants were assured of confidentiality and their consent was sought before the commencement of the discussions.

The focus group discussions were conducted using a topic guide which was formulated within the objectives of the study and designed to capture different aspects of information regarding tetanus immunization and poverty reduction to supplement the findings of the quantitative analysis.

## **Section 3: Key findings**

### **3.1 Descriptive Statistics**

The descriptive statistics were generated by analysis of the mean socio-economic characteristics of mothers whose babies had a low birth as compared to those with normal birth weight.

#### **Education Level**

The mean education level of mothers with babies with a birth weight of less than 2.5 kg was 8.14 years of schooling, as compared to 8.48 years of schooling for mothers with babies with a birth weight of 2.5 kg or more. The mean difference in mothers' education level was statistically significant at the 1% significance level. The results suggest that education level increases the probability of having a baby with a normal birth weight.

## **Age**

The overall mean age of the sampled mothers was 27.4 years, while the mean age of the mothers with low birth weight babies was 26.5 years and the mean age for mothers with normal birth weight was 27.4 years. The mean age difference was statistically significant at the 1% significance level. By implication, younger mothers were more likely to give birth to low birth weight babies.

## **Wealth Index**

The wealth index was used as a proxy for household income. The results suggest that mothers from poorer families (mean wealth index of 0.014) were more likely to give birth to low birth weight babies as compared to mothers from wealthier families (mean wealth index of 0.056). The difference in the mean wealth index was statistically significant at 1% significance level. The intuition of this result is that wealthier households can afford a more nutritionally balanced diet for expectant mothers which positively influence birth weight, as compared to poor households.

## **Tetanus Immunization**

Among the mothers with low birth weight babies, 68% had received immunization against tetanus during pregnancy. However 96% of the mothers with normal birth weight babies had received tetanus immunization. The intuition from these results is that immunization against tetanus during pregnancy enhances the birth weight of the unborn babies.

## **Antenatal Care**

The probability of having received antenatal care from qualified medical personnel was lower for mothers with low birth weight babies (0.71) as compared to mothers with normal birth weight babies (0.96). By implication antenatal care increases the probability of having normal birth weight babies. The purpose of antenatal care is to diagnose and treat for any infections which may affect the health of the mother or the unborn child. The proper diagnosis can only be done by trained medical personnel. These results suggest that the quality of antenatal care is higher when administered by trained medical personnel and this increases the probability of normal birth weight. It follows that the antenatal care provided by traditional doctors and/or traditional birth attendants is of poor quality.

## **Access to Mass Media**

Mass media access is measured in terms of having listened to a radio or television at least once a week. The probability of access to mass media was lower for mothers with low birth weight babies (0.02 for television and 0.51 for radio) as compared to mothers with normal birth weight babies (0.28 for television and 0.68 for radio). What can be inferred from these results is that access to mass media provides mothers with more information which influences their behaviour to adopt measures that enhance the welfare of the unborn babies.

## **Paid Employment**

The mothers with low birth weight babies had a lower probability of being in paid employment (0.20) as compared to mothers with normal birth weight babies (0.45). The

intuition from these results is that the higher the probability of being in paid employment, the higher the chances of having normal birth weight babies.

### **3.2 Econometric Determinants of Birth Weight**

The instrumental variable (IV) model was used to estimate the determinants of birth weight in Botswana. The dependent variable for the IV model is birth weight (in kgs), with the explanatory being mother's socio-economic characteristics (immunization status, education level, age) and father's education level. But mother's immunization status is endogeneously determined and influenced by wealth index, time spent on fetching water, time spent on fetching firewood. The results suggest that birth weight in Botswana is positively and significantly influenced by mother's immunization status against tetanus, age, education level and husband's education level.

### **3.3 Qualitative Results**

The findings from the qualitative analysis confirmed that tetanus immunization enhances the normal birth weight of the babies and promotes good health conditions of the mothers and babies. Consequently, the time which would be spent in sickness (of child or mother) is freed for utilization in economic activities. However, their engagement in economic activities is constrained by lack of capital, lack of access to bank credit, low levels of education, exploitative tendencies of the private sector, cultural factors and gender division of labour.

## **Section 4: Policy implications/lessons based on the findings**

### **4.1 Policy Recommendations from Quantitative Findings**

The key policy recommendations arising from the econometric results are that government investment in reproductive health services is paying off a positive dividend in terms of the health status of newly born babies and should continue to be enhanced. In addition the education of the girl child is critical to enhance the general wellbeing of the future population through enhanced normal birth weights. While the Botswana government has invested heavily in the provision of universal education to both males and females, the females continue to face many challenges such as teenage pregnancy which makes them to drop out of school. The issues of girl child drop out from school have to be vigorously addressed

### **4.2 Policy Recommendations from Qualitative Results**

#### **Skills Training**

In order to address the issue of low levels of education which contributes to low pay, the participants expressed the need for government to make provision for them to learn skills which they can utilize to create more paying job so as to generate adequate income. Besides, government should make a provision to employ less educated mothers in jobs such as the army. They argued that even with their low levels of education they can serve in defence forces in order to earn income.

**Establishment of the Minimum Wage Policy for Private Sector**

Concerning employment in the private sector, the participants suggested that government should address the problem of exploitation by the private sector by setting a minimum wage which private sector should pay to less educated people.

**Improvement of Access to Credit**

The government credit schemes such as Citizen Entrepreneurship Development Agency (CEDA) should target more on the small businesses owned by women.

**Improvement for Antenatal Services /Care**

The participants expressed that whereas government has tried to sensitize them on Prevention of Mother to Child Transmission (PMTCT) and to put in place antenatal care facilities, improvement should be done by giving them adequate sensitization regarding tetanus immunization. They need more explanation on how tetanus immunization helps to protect the unborn baby and the mother. In addition antenatal care should strictly be provided by qualified and experienced medical personnel.