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## Determinants of Adolescent Fertility in Ghana

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### Abstract

Adolescence is a critical transitional period in everyone's life, and as much as adolescent childbearing is not uncommon in many countries, particularly in sub-Saharan Africa, it is quite imperative to study the underlining factors. However, in some sub-Saharan African countries such as Ghana, very little is known about these factors that influence adolescent fertility at both the regional and national levels. This article sought to examine the determinants of adolescent fertility in Ghana using secondary data from the 2008 Ghana Demographic and Health survey. Bivariate analysis was carried out to ascertain the proportions of fertility among female adolescents, while binary logistic regression model was applied to identify the determinants of adolescent fertility for the study period. The study revealed that adolescent fertility was significantly influenced by the level of education of the female adolescent and that her partner, the work status of the female adolescent, the wealth status, and the exposure to media. These determinants of adolescent fertility in Ghana as revealed in this study could form the basis for targeting adolescent sexual and reproductive health education interventions through effective social marketing.

**Keywords:** Determinants; adolescent; fertility; Ghana

### 1. Introduction

Previous studies carried out in Ghana were limited to the relationship between education and non-marital pregnancy, and between education and teen-pregnancy focusing mainly on how non-marital or teenage pregnancy affects individual human capital, as well as non-marital teenage pregnancy in Ghana focusing on the role and interplay of Ghanaian and English reading skills, formal educational attainment, and adult literacy

course participation [1, 2]. However, very little is known about the factors that influence adolescent fertility in Ghana, at both the regional and national levels. Adolescence is the transitional period from childhood to adulthood characterised by significant physiological, psychological and social changes. The World Health Organisation (WHO) defines the age group 10 to 19 years of age as adolescents and 15 to 24 as youth, while those in the age group 10 to 24 years are called young people [3].

The adolescent fertility rate measures the number of births per 1,000 women ages 15 to 19; and that for Ghana has been estimated at 62 births per 1,000 women aged 15 to 19 [4]. Even though the number of births among adolescent girls is declining around the world, adolescent childbearing remains common in many countries, particularly in sub-Saharan Africa and for that matter Ghana. Early childbearing poses serious consequences to the health and development of young girls. The risk of maternal death and disability is higher for adolescents than for women in their 20s; at the same time, early childbearing often limits girls' opportunities for education, training, and livelihood development. Adolescent childbearing is more common in developing countries, where nearly 10 percent of adolescent girls give birth each year, compared to less than 2 percent in developed countries [4].

Furthermore, it has been established that population growth is more rapid when women have their first child in their teen years [5-7], as early initiation into childbearing lengthens the reproductive period and subsequently increases individual lifetime fertility rates. Also, early initiation of childbearing is a major determinant of large family size and rapid population growth, particularly in countries where contraception is not widely practiced [8]. As a result of these far-reaching individual and social consequences aforementioned, adolescent childbearing remains a major concern for both developed and developing nations alike; and while the social consequences of adolescent childbearing depend on specific cultural, familial, and community settings, its physical or health-related consequences at the individual level are more problematic [9]. Therefore, the main objective of this article was to examine the determinants of adolescent fertility in Ghana. Specifically, the article sought to establish the prevalence of adolescent fertility in Ghana; and to ascertain the relationship between adolescent fertility and some demographic as well as socio-economic characteristics of female adolescents.

## **2. Materials and methods**

Data for this study was extracted from the 2008 Ghana Demographic and Health Survey (GDHS) data set. It is the fifth survey in the series of the global DHS programme, undertaken by the Ghana Statistical Service in conjunction with Macro International. The survey includes complete birth history of women and hence provides the best data source for this study. The 2008 GDHS is a nationally representative survey comprising 4,916 women aged 15-49 that used a two-stage sample design for selecting households for the data collection. Data collection took place over a three-month period, from early September to late November, 2008 [10]. The data were requested online from Measure DHS website on April 1, 2011, and an approval was subsequently given to download the data.

The dependent (outcome) variable for the study is adolescent fertility. To get this, data for women aged 15 to 19 were extracted from the full birth history (individual recode file) of the women aged 15 to 49. Furthermore, adolescent fertility was used as a proxy for the 'total children ever born' variable, where adolescents who had no child were coded '0' while those who had at least one child were coded '1'. Thirteen independent variables were selected for the study with the aim of examining the extent to which they influence adolescent fertility for the study period. Some of the variables were re-coded to suit the present study. Age of woman was re-coded as: 15-17, 18-19, while level of education of respondent and partner were re-coded as: no education, primary, secondary/higher. Work status of respondent was: working or not working, while marital status of respondent was re-coded as: never married, married/cohabiting, and widowed/divorced/separated. Ethnicity was re-coded as: Akan, Ewe, Ga-Adangme, Mole-Dagbani and Others, while religious affiliation was re-coded as: Christian, Muslim, traditionalist/spiritualist, and no religion. Furthermore, wealth status was re-coded as: poor, middle and rich, while type of residence was rural or urban. Knowledge of ovulatory cycle and media exposure were: yes or no and contraceptive use was: never used, only traditional method, only modern method; while region of residence was Western, Eastern, Central, Greater Accra, Volta, Ashanti, Brong Ahafo, North, Upper East and Upper West.

This study used the STATA data file, and for that matter STATA version 11 was used to process the data. The data was weighted using an adjusted sample weight to make way for national representation. Bivariate analysis was used to ascertain proportion of adolescent fertility among the independent variables. Furthermore, binary logistic regression model was applied to examine the extent to which the independent variables influence adolescent fertility. Logistic regression model was chosen because the dependent variable is dichotomous

denoting whether or not a woman ever had a child before age 20, and provides the likelihood of fertility among the various categories of female adolescents.

### **3. Results and discussion**

#### *3.1. Prevalence of adolescent fertility*

Table 1 presents proportions of fertility among women aged 15 to 19 at the time of the survey. A total of 1,037 female adolescents aged 15 to 19 took part in the 2008 Ghana Demographic and Health Survey. Of these 1,037 female adolescents, 106 (10.2%) had given birth at least once prior to the survey. In terms of prevalence among the indicator variables, child bearing was higher among older (aged 18-19) female adolescents (20.6%) than among younger (aged 15-17) female adolescents (3.0%). Even though adolescents with primary education constituted a larger part (40.6%) of the total number who had ever given birth, child bearing was highest (24.1%) among female adolescents with no formal education and lowest (5.9%) among female adolescents with at least secondary school education. Likewise, child bearing was highest (71.0%) among female adolescents whose partners had no formal education and lowest (59.2%) among female adolescents whose partners had at least secondary school education; although adolescents whose partners had at least secondary school education were the majority child bearers (44.6%).

Furthermore, female adolescents from Christian background constituted the majority of the child bearers (68.9%); however, child bearing was highest (23.8%) among the traditionalists or spiritualists, and lowest (4.5%) among female adolescents who had no religious affiliation. In terms of ethnicity, the Akan female adolescents were the majority (43.4%) of the child bearers; even though child bearing was highest among Ewe female adolescents (11.8%) and lowest among female adolescents from other miscellaneous ethnic groups (4.8%). Besides, whereas female adolescents who were married or living together constituted the majority child bearers (57.5%), child bearing was actually highest among female adolescents who were widowed, divorced or separated (66.7%) and lowest among female adolescents who were never married (4.0%). Further, child bearing was found to be higher among working female adolescents (22.7%) and rather lower among non-working female adolescents (4.1%). The results also indicate that, just as female adolescents from poor households constituted the majority of the child bearers (57.5%), child bearing was actually highest among them (14.0%) and lowest among adolescents from rich households (5.5%).

With regard to media exposure (TV/Radio), it was found that child bearing was higher among female adolescents who were not exposed to the media (13.4%) than those who were exposed (5.7%). Also, child bearing was higher among female adolescents who had knowledge of their ovulatory cycle (10.5%) than those

**Table 1: Proportion of adolescent fertility by selected variables**

Variables	Frequency	Percent	Proportion
Age of woman			
15-17	18	17.0	3.0
18-19	88	83.0	20.6
Level of education			
No education	21	19.8	24.1
Primary	43	40.6	17.8
Secondary/Higher	42	39.6	5.9
Partner's education level			
No education	27	41.5	71.0
Primary	9	13.9	69.2
Secondary/Higher	29	44.6	59.2
Religious affiliation			
Christian	73	68.9	9.2
Muslim	22	20.8	12.2
Traditional/spiritual	10	9.4	23.8
No religion	1	0.9	4.5
Ethnicity			
Akan	46	43.4	9.8
Ga/Dangme	5	4.7	8.3
Ewe	15	14.2	11.8
Mole-Dagbani	38	35.8	11.3
Others	2	1.9	4.8
Marital status			
Never married	37	34.9	4.0

Married/living together	61	57.5	63.5
Widowed/divorced/separated	8	7.6	66.7
Work status			
Working	78	73.6	22.7
Not working	28	24.6	4.1
Wealth status			
Poor	61	57.5	14.0
Average	23	21.7	11.6
Rich	22	20.8	5.5
Media exposure (TV/Radio)			
Yes	23	21.7	5.7
No	83	78.3	13.4
Knowledge of ovulatory cycle			
Yes	83	78.3	10.5
No	23	21.7	9.4
Ever used contraceptive			
Never used	62	58.5	7.3
Only traditional method	9	8.5	23.7
Used modern method	35	33.0	23.0
Type of residence			
Urban	39	36.8	8.7
Rural	67	63.2	11.4
Region of residence			
Western	7	6.6	7.4
Central	15	14.1	19.5
Greater Accra	7	6.6	5.4
Volta	8	7.5	9.0
Eastern	9	8.5	8.7
Ashanti	9	8.5	5.5
Brong Ahafo	12	11.3	15.8

Northern	19	17.9	17.4
Upper East	10	9.4	12.5
Upper west	10	9.4	8.8

Source: Computed from 2008 GDHS data set

who had no knowledge of their ovulatory cycle (9.4%). Additionally, the proportion of child bearing was highest (23.7%) among adolescent mothers who had used only traditional method of contraception, while it was 23.0 percent among adolescent mothers who used only modern methods, and lowest (7.3%) among adolescent mothers who never used any contraceptive, even though those who had never used any contraceptive constituted the majority (58.5%) and those who used only the traditional methods constituted the least (8.5%) of the adolescent mothers.

Child bearing was also higher among female adolescents from the rural areas (11.4%) than those from the urban areas (8.7%) of the country; and in terms of regional disparities, child bearing was highest among female adolescents from the Central Region (19.5%) and rather lowest among those female adolescents from the Greater Accra Region. Thus, the study revealed that adolescent fertility was more prevalent among those aged 18 to 19, the non-educated partners, the traditionalist/spiritualists, the Ewe mothers, the widowed/divorced/separated, the workers, the poor, those unexposed to the media, those knowledgeable of their ovulatory cycle, those who used only traditional method of contraception, and the rural dwellers as well as those from the Central Region, than their counterparts.

### *3.2. Determinants of adolescent fertility*

To examine the determinants of adolescent fertility for the study period, binary logistic regression analysis was carried out. Of the thirteen independent variables selected for the study, only five had significant relationship with adolescent fertility for the study period (see Table 2). These significant variables were level of education of woman, partner's level of education, woman's work status, wealth status and media exposure. Thus, the odds of fertility were 0.68 times lower for female adolescents who had attained primary school education and 0.19 times lower for female adolescents who had attained secondary school education or higher compared to female adolescents who had no formal education.

Female adolescents who had primary school education as well as those who had secondary school education or

**Table 2: Logistic regression analysis on adolescent fertility**

Variables	Odds ratio	P- value	95% Conf. Interval
Level of education			
No education (Ref)	1		
Primary	0.68*	0.042	0.012 - 1.396
Secondary/higher	0.19*	0.039	0.010 - 1.060
Partner's education level			
No education (Ref)	1		
Primary	0.92*	0.038	0.149 - 1.442
Secondary/higher	0.59*	0.047	0.261 - 1.876
Work status			
Working (Ref)	1		
Not working	3.98*	0.043	1.047 - 15.112
Wealth status			
Poor	25.46*	0.049	1.014 - 639.263
Average	4.45*	0.038	1.209 - 94.380
Rich (Ref)	1		
Media exposure (TV/Radio)			
Exposed (Ref)	1		
Not exposed	18.12*	0.019	1.609 - 203.935

Source: 2008 GDHS data set. Ref= Reference Category; \*  $p \leq 0.05$

higher were less likely to give birth compared to female adolescents who had no formal education. Thus, the likelihood of adolescent fertility decreased with the increase in the level of education of female adolescents. Corollary, female adolescents without any formal education were more susceptible to child birth, perhaps due to dearth in knowledge of sexual and reproductive health issues concerning their bodies.

This is consistent with Gupta and Mahy [11] and Alemayehu et al. [12] which found that a female adolescent's education exercised strong depressive influence on the probability of early child bearing.



Furthermore, the odds of fertility were 0.92 times lower for female adolescents whose partners had attained primary school education and 0.59 times lower for female adolescents whose partners had attained secondary school education or higher compared to female adolescents whose partners had no formal education. Similarly, the level of education of a female adolescent's partner also had a significant influence on the likelihood of early child bearing. Girls whose partners had primary level education and girls whose partners had secondary school education or higher were less likely to give birth compared to girls whose partners had no formal education. Hence, the likelihood of adolescent fertility decreased significantly with the increase in the level of education of a girl's partner. Like girls without formal education, girls whose partners had no formal education were susceptible to early child bearing; probably because uneducated partners may likely have sex without the use of any contraceptive or even marry earlier than their educated counterparts. This is consistent with Desriani's [13] finding that, the level of a husbands' education has a significant relationship with teenage motherhood.

Also, the odds of adolescent fertility were 3.98 times higher for female adolescents who were not working compared to female adolescents who were working. Thus, the work status of the female adolescent had significant influence on adolescent fertility. In effect, female adolescents who were not working were more likely to give birth compared to those who were working. This is quite likely because it is believed that working women tend to postpone their pregnancy [14; 15]. On the other hand, non working female adolescents may not delay child bearing probably because they may find modern contraceptives or induced abortion unaffordable; and may have an opportune time for child bearing and nurturing. Hence, they are more likely to give birth than working female adolescents.

Additionally, the odds of adolescent fertility were 25.46 times higher for female adolescents from poor households and 4.45 times higher for female adolescents from average status households compared to female adolescents from rich households. Hence, the wealth status of the female adolescent was also a predictor of adolescent fertility for the study period. Female adolescents from poor households as well as those from average status households were more likely to give birth compared to female adolescents from rich households. Thus, the likelihood of early child birth lessened with the increase in wealth status of female adolescents; making girls from poor households more susceptible to early child bearing. This implies that wealth status had significant negative relationship with teenage motherhood [16]. There are many reasons why female adolescents from poor households may be susceptible to early child bearing: inability to afford contraceptives, predisposition to

engaging in early sex or marriage for livelihood, as well as some environmental conditions may well be contributory factors.

Lastly, the odds of adolescent fertility were 18.12 times higher for female adolescents who were not exposed to the media compared to female adolescents who were exposed to the media. In effect, media exposure was also prominent in determining adolescent fertility. Female adolescents who were not exposed to the media (TV/Radio) were more likely to give birth compared to female adolescents who were exposed to the media. Quite expectedly, female adolescents who were not exposed the media were more susceptible to early child bearing, probably because of dearth of knowledge to make informed choices concerning their sexual and reproductive health matters. This is because the mass media are believed to play an important role in promoting social attitudes about fertility and reproductive behaviours [17].

#### **4. Conclusion**

This article examined the determinants of adolescent fertility in Ghana, drawing on data from the 2008 Ghana Demographic and Health Survey. The study sought to examine the prevalence of adolescent fertility in Ghana by some demographic as well as socio-economic characteristics of adolescent mothers, and ascertained the extent to which these characteristics determined adolescent fertility in Ghana for the study period. One major strength of this study is its use of GDHS, which is nationally representative, unlike other adolescent fertility studies that were confined to sub-regions or sub-groups.

In a nutshell, adolescent fertility just like any demographic phenomenon is determined by myriads of factors. Therefore, in this particular study, the level of education of the female adolescent and her partner, work status, wealth status, exposure to media were found to be the main determinants of adolescent fertility for the study period. It is a fact that adolescent fertility is a global problem, and in order to alleviate this problem, it is imperative that concerted efforts should be targeted toward child education, particularly girl child education as well as adolescent sexual and reproductive health education through effective social marketing. However, as much as this study drew on data from the 2008 GDHS, these determinants of adolescent fertility may be subject to change in the subsequent GDHS rounds.

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