Contraceptive Prevalence and Poverty Reduction among Women in Seven West African Countries

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Abstract

This study tests the hypothesis that contraceptive prevalence is likely to promote poverty reduction among women in West Africa. The study focuses on women of reproductive age because they are the mostly affected by poverty and the major bearer of reproductive burden. Data analysed were derived from the newest NDHS in the selected countries. OLS regression models were constructed in the analysis. The result reveals that in all the seven countries, ever use of modern contraceptives was positively related to poverty level indicator (β ranges between 0.026 and 0.112) along with education (β ranges between 0.236 and 0.482) and urban residence (β ranges between 0.355 and 0.650) across the countries. This implies poverty level among women in the region is likely to significantly reduce in the nearest future if modern contraceptive prevalence is promoted now among them along with improved schooling and increasing urban residence.

Introduction

West Africa consists of 17 countries stretching over 6,140,000km^2 land areas bordered to the south and west by the Atlantic ocean, to the north by the Sahara Desert and to east by the Benue Trough. With population size of 313 million, the sub-region has an average birth rate of 40 per 1000 and it is experiencing a natural increase of 2.6 percent (Population Reference Bureau (PRB), 2011). It is largely a poverty stricken region. On the average, between 75 and 80 percent of the population live below US$2 per day (PRB, 2011; World Bank, 2011). This statistics suggest that there is a generalized poverty in the sub-region that could be described as chronic whereby a vast majority of the population is devastated by the intimidating pressure of the inability to adequately cater for basic needs (Oduro & Aryee, 2003). Adopting the traditional

conceptualization of poverty which stipulates that people are poor because they are unable to take care of the basic cost of living for themselves or/and that of their families, and also the international poverty line of the proportion of the population living below US$2 indicated above, it is apparent that poverty is still a wide spread social and economic menace in West Africa (O'Hare, 1996; Ijaiya, 2005; World Bank, 2011). The fact that women and children are the mostly affected by this situation makes the poverty situation quite devastating (Leete & Schoch, 2003; Population & Development Review, 2005).

Various poverty reduction strategies, mostly based on economic theories, have been tried with no significant outcome in most developing countries, especially in terms of the proportion of the poor. For instance in Nigeria, living standard deteriorated in the 1980s as a result of the then economic crisis. The adoption of the Structural Adjustment Programme (SAP) in 1986 was based on the premise that the deteriorating economic situation would be brought under control. However, standard of living worsened during and after the SAP (Ogwumike, 2004). With the exception of Ghana's modest attempt in the region, integrating the population issue, specifically family planning, in poverty reduction programme have not been given adequate attention (Ashford, 2007; Zosa-Feranil, Green and Cucuzza, 2009). Even on the global scene, reproductive health and family planning as factors in the drive towards poverty reduction in poor countries were not considered important until lately. For instance, family planning was completely omitted in over 60 indicators identified to measure the eight Millennium Development Goals. This neglect has been identified as capable of undermining poverty reduction initiatives in developing countries (Zosa-Feranil, Green and Cucuzza, 2009). Such neglect may be predicated on insufficient empirical evidence on the link between family planning and poverty (Greene and Merrick, 2005).To contribute in this regard, this study employs nationally representative data

sets in seven West African countries to test the hypothesis that contraceptive prevalence is likely to promote poverty reduction among women in West Africa.

The question of concern in this study is what is the nature of the relationship between contraceptive prevalence and poverty reduction among women in West Africa? A related question is what is the implication for poverty level in the sub-region generally and in particular among reproductive age women? This study examined these questions through the lens of Demographic and Health Survey in seven West African countries. It concludes that a significant relationship exists between contraceptive prevalence and poverty level among women in the sub-region. This implies that low contraception is a significant factor in the prevailing chronic poverty level in West Africa.

Interconnections between Contraception and Poverty Reduction

The relationship between contraceptive use and the economic well-being of females can be examined from micro and macro levels. At the macro level, all over the world, the highest level of poverty exists in countries with rapid population growth, high fertility rates and low contraceptive prevalence (Eastwood & Lipton, 1999; Kirby, Coyle & Gould, 2001; Merrick, 2002; Wusu & Ahiadu, 2006; UNFPA, 2009). For instance, countries in Sub-Saharan Africa exhibits very high fertility levels mainly attributable to very low modern contraceptive prevalence which is, on the average, 15.7(Bongarrts, 2010; United Nations, 2011). Incidentally, the region is home to the highest poverty level in the world (PRB, 2011; World Bank, 2011; Phumaphi, 2011). The process is simple. Because use of modern contraceptive is very low, child spacing and family size limitation are correspondingly unpopular. Aggregate fertility level is consequently very high, far above the replacement level of 2.1. This generate a very high

proportion of children and adolescents who are mainly dependants bringing about escalating dependency ratio. This situation mounts pressure on family and government income, thus reducing domestic saving and investment in socio-economic development. Ultimately poverty reduction in a significant way remains a mirage. On the other hand, when use of modern contraceptives soars in the region, child spacing and family size limitation would become popular and fertility level would decline. This will lead to reduction in dependency ratio which is capable of creating the demographic dividend situation if there is proper planning and existence of necessary institutions. National economic well being is very likely to emerge and sustainable reduction in poverty level at the country level realised (Bloom & Williamson, 1998). Women who now have more time to participate in labour force and share out of building wealth can experience better living condition (UNFPA, 2009).

It is against this background that studies have reported that family planning is critical to poverty reduction because of its impact on fertility (Leete & Schoch, 2003; UNFPA, 2004; Cleland et al., 2006; Allen, 2007; McLanahan et al., 2010; Welch, 2010; Gupta, Bongaarts & Cleland, 2011; Mwaikambo et al. . 2011; Phumaphi, 2011). It is also considered as the cost-effective means of improving well-being, development and consequently poverty reduction (Population & Sustainability Network, 2010). This relation has lead to the conclusion that family planning is key to the actualisation of the Millennium Development Goals 1to 3 and 6 to 8 (Cates Jr., 2010). Given this scenario, what is the present nature of this relationship in West Africa?

The interaction between contraceptive prevalence and poverty reduction at the micro level may be split into primary and secondary relationship. The primary angle of the relationship can be examined in two different ways. First, parents who adopt modern family planning methods are

most likely to space their children and are able to send both male and female children to school. This gives female children opportunity to acquire educational training which also positions them to easily access opportunities in life. Such opportunities place them on a pedestrian that is poised to reduce the risk of ending up in life as one of the economically impoverished. This is certainly difficult in families which do not plan their families with the help of modern contraceptives, who are not empowered to space their children and limit the number to manageable size. In such families, educational training for the children is most often prioritised on gender basis. It has been reported that the girl child suffers more than male children from additional children generated from unchecked childbearing (Kohler, Behrman & Skytthe, 2005). Female children are often forced to sacrifice their educational training in order to allow that of their male counterparts in view of the meagre income available to such families.

Such situation is preponderant in poor economies such as in sub-Saharan African countries. In the end a large proportion of illiterate girls are produced who often lacks information on the benefits of contraceptives and how to delay marriage and childbearing through the use of modern family planning methods. As a result, they get involved in childbearing very early and most likely to follow the same reproductive behavioural pattern of their parent. This creates a sustainable chain of poverty among the female folk. This situation generates a demographically embarrassing scenario such that in the immediate future traditional reproductive behaviour that engenders rapid population growth persist with the implication for increased childrearing burden on women. A situation that is capable of perpetuating high level of poverty among women at the micro level and accelerate the demand for social infrastructure on the government who is consequently unable to invest in employment generating ventures in order to provide means of livelihood for the population. Hence increase the proportion of women living below the poverty

line at the macro level, since women and young ones are more prone to poverty (PDR, 2005). The picture painted above underscores another route to the sustenance of the vicious circle of poverty.

The secondary aspect of the micro level relationship between contraceptive use and poverty reduction has to do with the effect of family planning on the girl child schooling. Female adolescents who are sexually active and do not practice use of reliable contraceptives are very likely to drop. This leads to two possibilities: such girls are likely to become victims of unwanted pregnancy and get their educational career prematurely terminated, they eventually go into marriage very early. If family planning is not adopted such girls are vulnerable to not spacing children and very large family size. These are veritable ways young girls are denied access to economic empowerment which generally result to chronic poverty (Kirby, Coyle & Gould, 2001; McLanahan et al., 2010; Phumaphi, 2011). This may be responsible for the fact that one fourth of the 1 billion people who live below the extreme poverty line of US$1 line all over the world are young people (UNFPA, 2004). However, if young girls are able to access effective family planning the probability that they would stay in school and be able to take decision on when to get involved in marriage, start childbearing and how to space children as well as the number of children is very high. This is the channel through which adolescent girls can get out of the poverty web.

Data and Methods

Data analysed in this study were derived from the National Demographic and Health Surveys (NDHS) conducted by ICF Macro in the selected countries. Countries were selected on the basis of availability of the 2005 and above series of DHS data sets.Table1 shows the selected

countries, sample size of the newest survey and the year it was conducted. The ICF Macro employed a probability sampling strategy in selecting study participants who were interviewed using a standard questionnaire. In all countries where DHS has been carried out usually utilise a nationally representative sample. To strengthen the representativeness of the study, the weighting procedure was applied to the data sets before analysis was carried out. This process invoved multiplying the weighting variable (v005) created by DHS by 1,000,000 and applying it to the study data file. The study population was women of reproductive age in selected countries (15-45 years of age). This study population was preferred because women are the most affected by poverty and they are the major bearer of reproductive burden (Leete & Schoch, 2003). The individual recode data file (women data) for each country selected for this study was retrieved from the Measure DHS website after due permission was obtained.

Table 1: Year of survey in selected countries by sample size

Country	**Year of survey**	**Sample size**
Benin	2006	17, 794
Ghana	2008	4, 916
Guinea	2005	7, 954
Mali	2006	14, 583
Nigeria	2008	33, 385
Senegal	2005	14, 602
Sierra Leone	2008	7, 374

Flowing from the topic, ever use and current use of contraceptives were the two major independent variables in the study. These variables were re-coded as dummy by coding each of the four categories (no method, folkloric, traditional and modern) as '1' and all others '0'. Wealth index factor score computed by Measure DHS to reflect women wealth status was adopted as poverty indicator in this study. So wealth index was the dependent variable. This variable was selected as a proxy to poverty level because it was computed to indicate the socio-

economic quartile the women belong to. The higher it is the lower the level of poverty status and vice versa. In addition, a few socio-economic variables were included in the model to ensure their effects were controlled for while measuring the effects of contraceptive use on poverty level. These variables were involved in the construction of Ordinary Least Square Regression Model (OLSRM) for each country to test the effects of contraceptive prevalence on wealth status of women in each country.

Result

Table 2 indicates the percentage distribution of respondents by the variables included in the regression models. The Table shows that never use of any contraceptives was highest in Mali (80.3%) and Senegal (80.2%) but lowest in Ghana (51%). Ever use of modern method was highest in Ghana (41.5%) and lowest in Guinea (16.3%). Ever use of traditional contraceptive method was highest in the republic of Benin and quite negligible in Senegal. A vast majority of the respondents were not practicing any current use contraceptives (ranging between 81% and 92%). Current use of any modern methods was highest in Ghana (13.5%) followed by Nigeria (9.5%) and Sierra Leone (9.4%) but lowest in Republics of Guinea, Benin and Mali (6.7%, 6.7% and 6.8% respectively). Looking at the categorical version of the wealth index, it appears similar pattern of the distribution of the respondents into the poor (collapsing poorest and poorer), middle and rich (collapsing richer and richest) prevailed in the seven countries. On the average, about 40% fell into the poor category, roughly above 40% into the rich category while roughly 20% in the middle class as far as wealth status is concerned. Among the other variables included in the OLS models for the purpose of controlling for their effects on wealth/poverty status of women in the selected countries, place of residence indicates that a vast majority of the respondents resided in rural areas (averagely 62%), 3.7 average years of schooling and in terms

of religious affiliation, majority of them spread between Christianity and Islam in all countries except in Ghana and Benin where relatively high proportion indicated traditional religion.

Table 2: Percentage distribution of women in seven West African countries by contraceptive use and other selected characteristics

Characteristics	Benin	Ghana	Guinea	Mali	Nigeria	Sierra Leone	Senegal
(N)	**(17794)**	**(4916)**	**(7954)**	**(14583)**	**(33385)**	**(7374)**	**(14602)**
Ever use							
Never used	59.4	51.0	77.4	80.3	74.8	73.4	80.2
Folkloric	0.2	0.1	5.0	1.3	0.6	1.7	1.2
Traditional	19.1	7.4	1.3	1.3	3.3	1.2	0.7
Modern	21.3	41.5	16.3	17.2	21.3	23.6	18.0
Current use							
Never used	83.5	81.3	89.6	92.0	86.8	88.7	91.7
Folkloric	0.2	0.5	2.8	0.4	0.9	1.1	0.6
Traditional	9.6	4.8	1.1	0.7	3.0	0.8	0.4
Modern	6.7	13.5	6.6	6.8	9.4	9.4	7.2
Wealth index							
Poorest	18.9	22.2	20.3	17.0	21.8	17.9	18.1
Poorer	18.8	18.7	20.2	19.5	20.4	16.7	21.2
Middle	19.4	18.2	19.6	20.8	19.7	17.8	24.4
Richer	21.1	20.8	21.0	20.2	19.6	21.2	19.0
Richest	21.9	20.0	18.9	22.6	18.4	26.5	17.3
Place of residence							
Urban	42.0	44.0	29.6	35.3	31.4	42.9	43.2
Rural	58.0	56.0	70.4	64.7	68.6	57.1	56.8
Years of schooling	3.45	3.58	3.52	3.6	4.46	3.42	3.8
Religious affiliation							
Catholic	15.4	14.9	87.5	91.9	10.8	26.3	95.7
Other Christians	2.4	0.9	8.9	3.4	40.9	73.0	4.1
Islam	21.8	6.7	1.6	1.5	46.5	0.1	0.1
Traditionalist	31.4	77.5	1.9	3.2	1.8	0.6	0.1

(N)=Sample size

Table 3 presents the OLS regression models constructed for the seven selected countries. The analysis reveals that in all countries the model relating wealth/poverty status and contraceptive prevalence was statistically significant (indicated by F statistic having *P* value = 000). There was also a high level of correlation between the independent variables (especially ever use and current use of contraceptives) in the model and wealth index factor score (R value ranges

between 0.67 and 0.80). The explanatory power of the model in all countries was also considerably high (adjusted R^2 ranges between 0.44 and 0.64). That is between 44% and 64% of the variations in wealth/poverty index can be attributed to contraceptive use and the control variables (place of residence, average years of schooling and religious affiliation).

As shown in the Table, traditional ever use of contraceptive was only significantly related to wealth/poverty index in Republic of Benin (β =0.034, P<0.01), Ghana (β = 0.026, P<0.05) and Sierra Leone (β = 0.026, P< 0.01). The relationship was positive in the three countries. In all the seven countries, ever use of any modern contraceptive was positively related to wealth/poverty index factor score (β ranges between 0.026 and 0.112 and P value was less than 0.01 for all the countries except in Ghana where it was less than 0.05). Also the coefficients of ever use of a modern family planning method was the highest compared to folkloric and traditional methods across all the countries. It is noteworthy that the positive effect of ever use of modern contraceptives on wealth/poverty index factor score was strongest in the Republic of Benin (β = 0.112).

Table 3: Ordinary Least Square analysis of contraceptive prevalence, selected characteristics and wealth Index factor score among women in seven west African Countries

	Beta Coefficients (β)						
Variables	**Benin**	**Ghana**	**Guinea**	**Mali**	**Nigeria**	**Sierra Leone**	**Senegal**
Ever Use of Contr.							
No method (r)							
Folkolric	-0.001	0.006	0.003	0.002	0.008	-0.001	-0.007
Traditional	0.034**	0.026*	0.014	0.002	0.025	0.026**	-0.001
Modern	0.112**	0.029*	0.056**	0.038**	0.075**	0.089**	0.046**
Modern							
Current Use of Contr.							
No method (r)							
Folkolric	0.006	0.002	0.017	-0.003	-0.001	-0.012	-0.009
Traditional	0.019*	0.016	0.002	0.008	0.019*	0.037**	-0.001
Modern	0.001	0.018	-0.016	0.021**	0.007	0.011	0.001
Years of Schooling	0.397**	0.364**	0.236**	0.266**	0.482**	0.261**	0.251**
Place of Residence							
Rural (r)							
Urban	0.355**	0.516**	0.650**	0.565**	0.394**	0.543**	0.595**
Religion							
Traditional (r)							
Catholic Christian	-	-0.018	0.028	0.011	0.017	0.042	0.047
Non-Catho. Christian	-	-0.002	-0.042**	-0.004	0.073**	0.000	0.233
Islam	-	0.014	-0.017	0.003	0.067**	0.019*	-0.001
(N)	**17794**	**4916**	**7954**	**14583**	**33385**	**7374**	**14602**
R	**0.665**	**0.738**	**0.797**	**0.725**	**0.767**	**0.769**	**0.746**
Adjusted R^2	**0.442**	**0.543**	**0.634**	**0.526**	**0.589**	**0.590**	**0.556**

**P<0.05; **P<0.01; - excluded; (N)-sample size*

It is also apparent in the table that current use of contraceptives did not exhibit consistent pattern of significant relationship with wealth/poverty index factor score as observed in ever use of contraceptives. Current use of traditional contraceptive was positively related to wealth/poverty index only in Benin (β = 0.019, P< 0.05), Nigeria (β =0.019, P<0.05) and Sierra Leone (β =0.037, P<0.01). Current use of modern contraceptive was only significantly related to wealth/poverty status of the respondent. Although non-contraceptive variables were included in the models as control variables, they constitute other significant determinants of women wealth status with stronger beta coefficients. Average years of schooling indicates that higher years of

schooling was positively related to the wealth status in the seven countries (β ranges between 0.236 and 0.482, P <0.01 for all the countries). Similarly, urban residence is also positively related to wealth/poverty status in all selected countries (β ranges between 0.355 and 0.650, P <0.01). Non-catholic Christian religious affiliation was negatively related to wealth/poverty in Guinea (β = -0.042, P <0.01) but positively related in Nigeria (β = 0.073, P <0.01). In a similar vein, Islam was positively related to wealth/poverty status among the reproductive age women in Nigeria (β =0.067, P <0.01) and Sierra Leone (β =0.019, P <0.05).

Discussion

This study has examined the relationship between contraceptive use and poverty reduction in West Africa. The main hypothesis tested was that contraceptive prevalence is likely to promote poverty reduction among reproductive age women in the sub-region. The analysis has shown vividly that a significant positive relationship exists between contraceptive prevalence and the wealth status of women in all the selected countries. The relationship persists even when other socio-economic variables were controlled for. Ever use of any modern contraceptives was most likely to raise women's wealth status thereby reducing poverty among the sampled women in the selected countries. Thus poverty among women in the region would be significantly reduced in the nearest future if modern contraceptive prevalence is promoted now among them. Contraceptive use is capable of reducing poverty level among women through its inverse relationship with fertility which is known for perpetuating poverty when it is high. Use of family planning methods also improve maternal and child health status through the negative relationship between contraceptive use and frequency of pregnancy as well as its positive effect on child spacing (Rahman, 1998). All these relationships promote healthy living of women and children which is critical to poverty reduction (Ashford, 2007).

The implication of this finding is that the higher the levels of modern contraceptive use among women the higher their wealth status. Furthermore, it is a truism that reproductive age women who adopt modern contraception would experience improved living condition. This translates to the fact that in West Africa, just as studies in other parts of the world have reported, a great deal of poverty reduction could be attained among women if higher levels of modern contraceptive adoption are achieved (UNFPA, 2004; 2009; Bhuyan, Borda & Winfrey, 2009; Zosa-Feranil et al., 2009; Gupta, Bongaarts & Cleland, 2011; Phumaphi, 2011). This provides an important explanation for why women are the most affected by the chronic level of poverty in Africa. Vast majority of women do not use effective contraceptive (UN, 2011). They are thus denied the opportunity to space their children or limit their family size to manageable number and be able to participate profitably in modern labour market. This situation prevents them from accessing income which can better their living condition. If something is not done urgently, women in this situation may pass this over to their female children and thus promoting the vicious circle of the feminisation of poverty in the region as discussed in one of the earlier sections.

The current data analysed in the seven countries selected clearly revealed that use of modern contraceptive in West Africa remains largely very low. With the exception of Ghana where ever use was as high as 41.5%, never used any contraception was as high as 80% in the sub-region. This is the picture painted by other current sources of information (UN, 2011; PRB, 2011). This lends credence to the fact that the socio-cultural institutions that sustain pronatalist reproductive health behaviour are still very strong in most part of West Africa. In addition, the fear of possible side effects of the modern methods that had been identified as impeding use of modern methods among women in Africa has not really abated (Wusu & Isiugo-Abanihe, 2007). So in spite of

various national and international campaigns to promote wide spread use of effective contraception in Africa, the adoption of family planning methods among women is still very low.

In the analysis, current use of modern contraceptives did not manifest any significant relationship with wealth index factor score in all the countries except in Mali. This is likely indicating the possibility that contraceptive use may not have immediate effect on wealth index factor score or poverty level among women. However, if use persists, it is very likely that such women would reduce their reproductive burden through either profitable child spacing or limiting family size which pave way for declining cost of childrearing and ultimately release resources for improving their well-being (Allen, 2007; Gupta, Bongaarts & Cleland, 2011; Phumaphi, 2011). Thus present wide spread adoption of modern contraception in the sub-region is most likely to make significant impact on poverty level sooner or later. This explanation is also validated in the analysis which clearly showed that ever use of modern methods was significantly related to wealth index among sampled women in all countries.

It has also been demonstrated that beside modern contraceptive use, schooling and urban residence are very strong predictors of wealth status of women in West Africa. The two factors were positively related to the dependent variable while the influence of other predictors was controlled for. The beta coefficients for schooling and urban residence were higher in all countries than that of any other significant factors in the models. It thus shows that poverty reduction among women cannot be actualised if improved schooling and qualitative urban residence are not given adequate attention.

In conclusion, in view of the apparent effect of contraceptive prevalence on wealth or poverty status of reproductive age women in the region, it is imperative make reproductive health

concerns an integral part of poverty reduction strategies in various countries in West Africa. In this regard the Ghanaian model is most appropriate. The implementation should be invigorated and other countries in the sub-region could adopt it. Furthermore, government agencies saddled with the responsibility to drive poverty reduction and non-governmental organisations that are into improving women well-beings would have to ensure that sufficient investment goes into family planning campaigns in various countries. It is also important that various modern methods are made available at affordable cost in both rural and urban areas, especially female centred methods. It may be appropriate to subsidize the provision of such family planning methods. If more women can access the methods and are able to have control over their reproductive lives and reduce their reproductive burden. They can take advantage of modern labour market, earn improved income and better their well-being. Of course this would also reduce the pressure on government purse and release resources for the provision of infrastructure which ultimately improve the general well-being of the general population. Women and children would definitely benefit from such improvement. Finally, poverty reduction initiatives would most likely experience major boost in West Africa if family planning programmes are incorporated.

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