

A COMPARATIVE STUDY OF CONTRACEPTION AS PROXIMATE DETERMINANT OF FERTILITY AMONG WOMEN IN RURAL AND URBAN AREAS OF OSUN STATE SOUTHWESTERN NIGERIA

Adebimpe Wasiu Olalekan MPH FWACP ¹ and Asekun-Olarinmoye Esther MD, FWACP ²

^{1,2} Department of Community Medicine,
College of Health Sciences
Osun State University, Osogbo Nigeria

All correspondences to:

Dr Adebimpe Wasiu Olalekan
Department of Community Medicine,
College of Health Sciences
Osun State University, Osogbo

E mail: lekanadebimpe@yahoo.com, lekanadebimpe@gmail.com

Abstract

Introduction: The persistently high fertility despite family planning programmes has led to population explosion, with various effects on man and his environment. This study compared contraceptive practices among rural and urban women in Osun State, South-western Nigeria

Methodology: Descriptive, cross sectional comparative study among 1024 women of reproductive age group using multistage sampling method. Research instrument used were pre-coded, pre-tested, semi structured interviewer administered questionnaires, and data analyzed using the SPSS software.

Results: Four hundred and thirteen (83.4%) and 475 (95.4%) of rural and urban respondents were aware of contraceptives with only 86(18.6%) and 239(48.5%) using a method respectively. Seventeen (3.3%) and 95(18.6%) of rural and urban respondents respectively used their contraceptive methods consistently. Thirty eight (7.4%) and 118 (23.1%) of urban and rural respondents respectively used a condom the last time they had sexual intercourse. Mean number of births per woman was 3.4 ± 1.8 births per woman in rural, and 2.9 ± 1.5 births per urban woman. Sixty nine (44.3%) of rural and 164 (52.4%) of urban respondents had discontinued their contraceptive method at one time or the other

Women with formal education had about a half (OR=0.59, C.I=0.45-0.95 and p=0.001) fold fertility compared to women with no formal education. Similarly women who used

contraceptives have about one-eighth (OR=0.08, C.I=0.06-0.12 and p=0.019) fold chance of a fertility compared to women not using contraceptives.

Conclusion: Contraceptive services should be made more accessible to all women of child bearing age, most especially those living in rural communities.

Key words: Fertility, rural and urban communities, contraception, determinants

Introduction

The population of a country or a defined area is largely determined by the three variables of deaths (mortality), births (fertility) and migration. The balance between these variables determine whether a population decreases or increases in number. There is widespread concern that ongoing rapid population growth may be constraining development of many countries of the world.

In the year 2000, it was estimated that the population of the world is growing by about 78 million per year at the rate of 1.4%, and will increase by about 1 billion in every 13 years. It exceeded 6 billion in 1999, and it is projected to rise to over 8 billions in 2025 (Cohen, 1998). A global concern of high fertility is a high population growth rate leading to population explosion. Among developing countries surveyed since 1990, total fertility rate was highest in sub-Saharan Africa at an average of 5.3 children per woman and lowest in Asia, Latin America and the Caribbean at 3.5 (UNPF, 2000).

Nigeria is the most populous country in Africa and with a rapid population growth that outweighs the growth of resources; the country requires population control to alleviate poverty which is prevalent in the country, as well as raising the standard of living of the people. Overpopulation may worsen poverty among families and communities thereby contributing to high morbidity and mortality.

With a current population of over 150 million and a growth rate of approximately 2.4 percent per annum, Nigeria is the most populous country in Africa (PRB, 2007). Population explosion causes a reduction in the 'carrying capacity' of the ecosystem, overexploitation, depletion and pressure on natural resources, thus threatening public health. In the event of overpopulation, consequently there will be water and food shortages, deforestation, environmental pollution, damage of coastlines, changing biodiversity and global adverse climatic changes, as a result of the excessive actions of man (Hinrichsen and Robey, 2000).

Contraception is perhaps one of the major scientific strategies in population control, as it helps to prevent unwanted pregnancies, limit family size and prolong birth intervals. Africa is the region with the highest annual population growth rates, ranging from 2.2 % to 2.8%, compared to 1.4% to 1.7% for the world as a whole (UNDP 2001). The fertility rate in Nigeria is high, at an average of 5.7 children per woman. Only 8 percent of married women use a modern method, while intention to use FP (among married women who are not currently using an FP method) is also relatively low, at 64 percent, and urban women were more likely to use a method than rural women (NPC 2004). Many use contraceptives inconsistently, and this is in spite of a high awareness of contraception reported in the country (Arowojolu et al, 2002).

The persistent high fertility in most parts of the world, despite family planning programmes suggests that there are yet undetermined factors associated with contraception that has been rendering this strategy less effective. This study will serve as baseline evidence and information for national governments, non governmental organizations (NGOs), national and international organizations working on fertility reduction programmes through contraception; serve as advocacy tools for a more coordinated approach and assist in design of programmes that

could use the window of contraception to finding a solution to the problems of soaring fertility pattern.

Examining fertility determinants such as contraceptive practices of women is thus important in this era of significant rural-urban drift and despite that a very significant percentage of the population still live in the rural areas. The general objective of the study is to describe and compare contraceptive practices as determinants of fertility among women living in rural and urban communities of Osun State in South western Nigeria

Methods

Study area: Osun is a state in Southwestern region of Nigeria, with Osogbo town as the state capital. In the rural areas, majority of inhabitants are farmers while in the urban settings, they are mostly traders, artisans and civil servants. There are thirty local government councils and an area office (in Modakeke-Ife).

Study design: This is a descriptive cross sectional, comparative study of pattern of contraception as a determinant of fertility among women of reproductive age in rural and urban communities of Osun state in Southwestern Nigeria.

Study population: The target populations were women of reproductive age 15 to 49 years in Osun state. Eligible women would have been living in the rural or urban area for at least five years. Women who responded to the research instruments constitute the study population.

Sample size estimation: Using the sample size calculation formula for the comparison of two rates (Olawuyi 1996), and a prevalence rates of 0.61 for rural and 0.48 for urban according to

national demographic and health survey (UNPF 2000), the calculated sample size was 512 for each of rural and urban respondents. Total sample size was 1024.

Sampling method: A multi stage sampling method was adopted in sample selection. In stage I, five (16.6%) of the thirty Local Governments areas in the state were selected by simple random sampling, employing simple balloting. A list of communities designated as rural and urban per local government was obtained from the Osun state Ministry of local government and chieftaincy affairs. In stage II, one rural and one urban community were selected per local government using simple random sampling (simple balloting). This evolved a total of five rural and five urban communities recruited for the study. By equal allocation techniques, 105 questionnaires were allocated to each community.

In stage III, a sampling frame of all enumeration areas in each community was drawn. The enumeration areas used was allocated by the National Population Commission for the 2006 National population census. One enumeration area (EA) was selected per community using simple random sampling (simple balloting). In stage IV, a sample frame or list of all streets in an enumeration area was prepared and two streets were chosen per enumeration area by simple random sampling employing simple balloting. On a street, the existing primary health care household numbering was utilized to select houses. Every house with the last number being an even number was selected (for rural communities) and odd numbers for urban communities.

Data collection: All eligible women met in the sampled houses were interviewed with pre coded, pre tested interviewer administered questionnaires conducted by trained research assistants who could also speak local language. A vernacular version of the questionnaire was prepared for the uneducated respondents to reduce inter-observer variation in interpretation

during the interview. Five visits to each of the rural and urban setting were made. Whenever a house was found to be empty, such houses were omitted and the next house to it was selected to replace it.

Study variables: Information on socioeconomic characteristics of the respondents, their fertility pattern and preferences were obtained. Information collected on pattern of contraception include knowledge, attitude and practice of contraception and factors associated with non use of contraceptive methods. Consistent condom use meant that the respondent used condoms regularly or almost all the time

Ethical consideration and Limitation: Approvals were obtained from appropriate quarters including the local ministries and departments, heads of communities and expanded households. One limitation of this study is possible dis-inhibition to information on the part of some respondents as a result of some cultural beliefs that may prohibit counting of number of children a woman have for her husband. This was appropriately handled by persuasive training and sensitivity of the research assistants.

Data management: The SPSS Version 12.0 statistical package was used for data entry and analysis. Validity of data collected was ensured by double entry and random checks for errors. Relevant frequency distributions and summary measures were done. The Chi-square test was used to demonstrate relationships between categorical variables, and two independent sample T test analysis was used to compare mean differences between quantitative variables. Multivariate analysis of quantitative variables was done using the regression model. Level of significance was set at P-values ≤ 0.05 for all inferential analysis.

Results

Table I shows that the highest proportion of respondents was found in the age group 25-34 years and 25 to 34 years in the urban and rural communities respectively. One hundred and ten (21.5%) of rural respondents had no formal education, compared with 38 (7.4%) of urban respondents. The distribution of respondent by religion shows that the Muslims formed the highest proportion (48.5% in rural and 42.8% in urban settings) while Catholics constitutes 21(4.1%) of rural respondents compared with 26(5.1%) in urban. Four hundred and sixty seven (91.2%) of respondents in the rural settings were married compared with 414 (80.9%) of urban respondents.

Table II shows that the highest proportion of respondents had first sexual contact within the age group 15-19 years and 20-24 years in rural and urban communities respectively. Mean age at first sexual intercourse was 18.0 ± 3.9 years for rural and 19.5 ± 5.0 years for urban. Two hundred and twenty eight (49.2%) of rural respondents were aware of the unsafe or ovulation period compared to 340(68.3%) of urban respondent. In urban, 192(92.1%) could correctly described ovulation period compared with 86(34.8%) in rural.

Four hundred and thirteen (83.4%) of rural respondents were aware of contraceptives with only 86(18.6%) using a method. Among urban respondents, 475 (95.4%) were aware of contraceptives while only 239(48.5%) were using a method. About 69(44.3%) of rural respondents had discontinued their contraceptive method at one time or the other, as compared to 164 (52.4%) of urban respondents. Seventeen (3.3%) and 95(18.6%) of rural and urban respondents respectively used their contraceptive methods consistently. Thirty eight (7.4%) and 118 (23.1%) of urban and rural respondents respectively used a condom the last time they had

sexual intercourse. More respondents in both communities favoured multi parity, having had 2-4 children and these include 289(56.4%) of rural and 322(62.9%) of urban respondents. This was followed by grand multi parity and then mono parity. Mean number of births per woman (index of total fertility rate) was 3.4 ± 1.8 births per woman in rural, and 2.9 ± 1.5 births per urban woman. Two hundred and eighty eight (58.8%) of rural respondents desired more children compared to 257(52.6%) of urban respondents.

Table III showed that condoms followed by injectables and IUCD were the commonly known methods of contraceptives among both urban and rural respondents. Also condoms 33(28.7%) and injectables 36(31.3%) had the highest proportion of use among rural respondents. In urban communities, 141(52.4%) used condoms while 106(20.7%) used injectables. Common reasons given by urban women for discontinuity of contraceptive methods include the fear of side effect (40.4%), inconvenience (44.0%), high cost (4.6%), ineffectiveness (3.7%), and ignorance of method (3.7%).

Table IV shows that there was a significant association between desire to have more children (among both rural and urban respondents) and use of contraceptives and the level of education ($p=0.001$). The mean age at first sexual intercourse was higher in urban (19.5years) than in rural (18.0 years), and this was statistically significant ($t = 5.108$, $p=0.001$). Also, the mean number of children ever had was higher in rural (3.4) than in urban (2.9), and this mean was statistically significant ($t = 5.108$, $p=0.010$).

A multiple regression analysis showed that women with formal education had about a half ($OR=0.59$, $C.I=0.45-0.95$ and $p=0.001$) fold fertility level compared to women with no formal education. Similarly women who used contraceptives have about one-eighth ($OR=0.08$,

C.I=0.06-0.12 and $p=0.019$) fold chance of a fertility compared to a woman not using contraceptives.

Discussions

In this study, most respondents had their first sexual experience between 15 and 24 years, with the mean age at first sexual intercourse about two years higher in urban compared with rural women. When compared to the NDHS (NPC 2000) in which age at first sexual intercourse among studied women was found to be 18 years among half of respondents, and before 15 years in a quarter of them, it could be deduced that age at first sexual intercourse is generally higher in this study. This could be as a result of persistent health education by all relevant stakeholders associated with the care of youths, incusing the homes, places of worship, the community, the media and governmental and non governmental organizations. The scourge of HIV/AIDs has greatly contributed to the increasing fear of indiscriminate sexual intercourse and age at initiation of sexual intercourse.

The age at sexual intercourse is an indirect way of assessing respondent's exposure to reproductive health risks including pregnancy, abortion, childbearing and sexually transmitted infections. The fact that nearly half of urban respondents had experienced first sexual intercourse before 24 years of age could be supported by a study (Arowojolu et al 2000), in which about 87% of Nigerian undergraduates were sexually active, with age at first sex recorded as 16.3 years (Kuno et al 2002), and more than half of women studied had sex before 18 years (NPC 2002).

The rural-urban difference in onset of sexual exposure could be due to the fact that majority of schools that may be teaching sexuality education were located in urban areas. This implies that girls and young women in rural areas might not be conversant with sexuality information early enough as a result of poor accessibility to family life education, and poor

access to media advertisements against STIs and HIV most of which takes place in the urban areas. The implication of this is that early sexual exposure may lead to further exposures, early pregnancy and subsequent or early fertility.

In this study, there was a high awareness of contraception among majority of both rural and urban respondents, but less than one fifth of rural and less than half of urban respondents were contraceptive users. This agreed with other studies, (Arowojolu 2000, Rutstein 2005, Conde-Agudelo and Balizan 2000, Gillespie 2004), in which awareness of contraception was high among majority of respondents, but only a minority used a method.

In this study, women who used contraceptives had a one-eighth fold of a fertility compared with a woman not using contraceptives. The finding confirms the low rates of contraceptive use and high fertility rates that persisted in most countries of sub-Saharan Africa (Ross et al 2004, WHO 2005). This trend also agreed with another study in Nigeria (Oye-Adeniran and Adewole 2005) in which an inverse relationship between fertility preference and use of contraception was found. The lower usage rate recorded in this study when compared to some other studies could be due to the fact that contraceptive services were still regarded as specialized services that were available only in designated health centers, and coupled with the fact that contraceptive information appeared restricted and were not freely advertised on the media except condoms. The rural urban disparity could be explained by the fact that contraceptive services were not readily available in rural health centers apart from the fact that comprehensive health centers were less common in rural areas, as most of their health facilities were mere health centers, health posts and dispensaries with inadequate resources to provide services.

The respondents in this study have used the various contraceptive methods. Condoms, injectables, IUCD, OCP and post coital contraceptive pills were the most patronized methods, with the highest proportion found in the condom. This had been supported by another similar study (Oye-Adeniran and Adewole 2005). Condoms are accessible, affordable and easy to apply or use and its side effects are minimal. These days, emphasis were laid on emergency pills most especially among singles since most of the time, their sexual contacts are not planned. In addition, these drugs are available over the counter for easy purchase.

In this study, about half of respondents discussed family planning with their husbands, and this supports a similar study in which spousal agreement or disagreement on contraception was described as a strong determinant of subsequent fertility (Rutstein 2005). Therefore men's fertility intentions, reproductive preferences and their attitude towards family planning might influence the fertility behavior of their wives and their attitudes towards the use of modern contraceptives. The need for a better role for men has been supported by other studies (Togunde, and Newman 2005, Adekole 2001).

In this study, fertility was higher in rural women than urban women evident by difference in mean number of children ever had being higher among rural locations than urban. The mean differences were also statistically significant. This has been supported by NDHS (NPC 2000). In 59 of 60 surveyed developing countries, rates of contraceptive use among married women in rural areas are lower than in urban areas (Gebrekidan 2002). Also in all countries surveyed since 1990, the total fertility rate is lower in urban areas from a difference of just 0.1 children per woman in Mauritius to as much as 3.4 children in Uganda (Lawoyin and Onadeko 1997). Women in urban areas are more likely to have access to contraceptive messages and services compared to rural. Fertility that has dropped significantly in this study compared with the NDHS

could be attributed to stepped up awareness on contraception, breastfeeding as a contraceptive method, and harsh economic situation that has made many households to limit the number of children they desire.

As seen in this study, better educated women were found to have lower fertility. This has been supported by the national demographic and health survey (NPC 2009). Better-educated women have broader knowledge, higher socioeconomic status and less fatalistic attitudes towards reproduction than do less educated women. The disparity in number of women with formal education between rural and urban settings could be due to the fact that educational resources and facilities were more located in the cities. These days, there have been reported attempts at teaching reproductive and sexual health education in schools, and this may be affected by availability of resources for education, most of which are concentrated in the urban areas.

Conclusion

Fertility was higher in rural compared to urban areas studied. Though awareness of contraceptive methods was high in both settings, use of contraceptive methods was higher among urban than rural respondents. For effective fertility control, more efforts should be made to ensure easy accessibility of contraceptives counseling and services to all women wherever they live, and most especially those in the rural areas.

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TABLE 1: SOCIODEMOGRAPHIC DATA OF RESPONDENTS BY LOCATION

Variable	Rural n (%)	Urban n (%)
Age in years		
15-24	107(20.9)	105(20.5)
25-34	206(40.2)	203(39.6)
35-44	156(30.5)	182(35.6)
45 and above	43(8.4)	22(4.3)
Education level		
No formal	110 (21.5)	38(7.4)
Primary	166(32.4)	81(15.8)
Junior secondary	67 (13.1).	62 (12.1)
Senior secondary	135 (26.4)	175(34.2)
Post Secondary	29 (5.7)	135(26.4)
Others e.g. Koranic	5(1.0)	21 (4.1)
Occupational group		
Professionals e.g. Doctors	8(1.6)	81(15.8)
Skilled e.g. Teachers	332(64.8)	279(54.5)
Semi skilled e.g. Artisans	85(16.6)	107(20.9)
Unskilled e.g. Petty traders	54(10.5)	4(0.8)
Unemployed e.g. Housewife	33(6.5)	41(8.0)
Religion		
Catholic	21(4.1)	26(5.1)
Protestant	234(45.8)	159(31.1)
Islam	248(48.5)	219(42.8)

Traditional	3(0.6)	7(1.4)
Others.	6(1.0)	101(19.7)
Marital status		
Single	12 (2.3)	63(12.3)
Married	467(91.2)	414(80.9)
Divorced	10(2.0)	11(2.1)
Widowed	13(2.5)	16(3.1)
Separated	10 (2.0)	7(1.4)
Others	0 (0.0)	1(0.2)

TABLE II: PATTERN OF CONTRACEPTION AMONG RESPONDENTS BY LOCATION

Variable	Rural n (%)	Urban n (%)
Age at first sexual intercourse	(N=432)	(N=465)
Less than 15	50(11.5)	31(6.7)
15-19	215(56.1)	175(40.3)
20-24	146(38.1)	185(42.6)
25-29	19(5.0)	70(16.1)
30-34	2(0.5)	4(0.9)
Awareness and use of contraception		
Aware of unsafe/or ovulation period	228(49.2)	340(68.3)
Correctly described it	86(34.8)	192(59.1)
Aware of contraception	413(83.4)	475(95.4)
Ever used contraception	86(18.6)	239(48.5%)
Using a method now	46(8.9%)	198(38.7%)
Use chosen method consistently	17(3.3%)	95(18.6%)
Used condom at last sexual contact	38(7.4%)	118 (23.1%)
Discontinued a method before	69(44.3%)	164 (52.4%)
Reasons for discontinued use		
Fear of side effect	19(45.2)	44(40.4)
Inconvenient	21(50.0)	48(44.0)
Ineffectiveness of methods	0(0.0)	8(7.4)
Costly/Inaccessible/Others	0(0.0)	9(8.3)
Reasons for never used a method		
Fear of side effect	67(35.1)	99(48.1)
Cultural	16(8.4)	12(5 .8)
Religion	14(7.3)	15(7.3)
Ineffective/Ignorance of method	89(46.6)	50(24.3)
Costly/inaccessible/Others	5(2.6)	30(14.6)
Number of children ever born	(N=512)	(N=512)
0(Nulliparous)	11(2.1)	24(4.6)
1(Monoparous)	75(14.6)	87(17.0)
2-4(Multiparous)	289(56.4)	322(62.9)
5 and above(grandmultiparous)	137(26.8)	79(15.5)
Desire for more children	(N=490)	(N=489)
No	202 (41.2)	232(47.4)
Yes	288 (58.8)	257(52.6)

TABLE III: KNOWLEDGE AND USAGE OF CONTRACEPTIVE METHODS AMONG RESPONDENTS BY LOCATION

Methods	Knowledge of contraception		Usage of contraception	
	Rural n (%)	Urban n (%)	Rural n (%)	Urban n (%)
Condom	227(61.2)	328(70.7)	33(28.7)	141(52.4)
IUCD	71(19.1)	70 (15.1)	21(18.3)	68(25.3)
Injectable	38(10.2)	12(2.6)	36(31.3)	106(20.7)
OCP	27(7.3)	38(8.2)	14(12.2)	21(7.8)
Spermicidal	0(0.0)	5 (1.1)	-	-
Traditional	7(1.9)	5(1.1)	10(8.7)	8(3.0)
Others	1(0.3)	6(1.3)	1(0.9)	15(5.6)

**TABLE IV: ASSOCIATION BETWEEN SELECTED FERTILITY DETERMINANTS
AND USE OF CONTRACEPTION**

Determinants)	Rural N (%)	Urban N (%)	Test	P values
(a)Association with a desire to have more children	Freq/%	Freq/%	X²	
Used contraceptive	46(17.5)	207(43.7)	40.672	0.001
Level of education	47(16.3)	18(7.0)	72.743	0.001
(b) Mean differences between locations	Mean	Mean	t value	
Age at first sexual intercourse	18.0(+3.9)	19.5(+5.0)	5.108	0.001
No of children ever had/born	3.4(+1.8)	2.9(+1.5)	4.873	0.010
(c) Multiple logistics	Odds ratio	Confidence interval		
Level of education				0.001
Nil formal	1.00			
Formal	0.59	0.45 – 0.95		
Used contraceptives				0.019
Yes	0.08	0.06-0.12		
No	1.00			