

## A COMPARATIVE STUDY OF SOCIO-DEMOGRAPHIC DETERMINANTS AND FERTILITY PATTERN AMONG WOMEN IN RURAL AND URBAN COMMUNITIES IN SOUTHWESTERN NIGERIA

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### ABSTRACT

**Introduction:** The global population has been on the increase, and this may be as a result of persistently high fertility recorded in most parts of the world. Examining the various fertility determinants, most especially socio cultural intricacies may provide information that could help in the design of fertility reduction programmes. The objective of this study is to determine and compare fertility pattern and socio demographic factors influencing fertility among rural and urban women in Southwestern Nigeria.

**Methodology:** A descriptive, cross sectional comparative study among 1024 women of reproductive age group in rural and urban communities of Osun State 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:** One hundred and ten (21.5%) of rural respondents had no formal education, compared with 38 (7.4%) of urban respondents. Muslims formed the highest proportion (48.5% in rural and 42.8% in urban settings). Four hundred and sixty seven (91.2%) of respondents in the rural settings were married compared with 414 (80.9%) of urban respondents. Mean age at first sexual intercourse was 18.0  $\pm$  3.9 years for rural and 19.5  $\pm$  5.0 years for urban. Mean number of total pregnancies was 3.9  $\pm$  2.2 pregnancies per woman for rural and 3.1  $\pm$  1.9 pregnancies per woman in urban setting.

The mean age at first birth among rural respondents was 20.8  $\pm$  3.7 years and 23.2  $\pm$  5.1 years among urban respondents. Mean number of births per woman (index of total fertility rate) was 3.4  $\pm$  1.8 births per woman in rural, and 2.9  $\pm$  1.5 births per urban woman. There were more spontaneous miscarriages and less induced abortions among rural women compared to urban women. Two hundred and eighty eight (58.8%) of rural respondents desired more children compared to 257 (52.6%) of urban respondents.

There were significant association between the relative locations and the mean number of children ever had, mean age at marriage, mean number of living children lost, mean number of miscarriage and the mean age at first birth. Further logistics 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

**Conclusion:** Understanding socio-demographic determinants of fertility would help programme planners in effective design of programmes that would help to control fertility in both rural and urban areas in Nigeria

**KEYWORDS:** Fertility, socio demographic factors, abortions

### INTRODUCTION

A lot of concerns have been expressed about population growth and welfare of human beings and his environment. The fear of the world population exceeding carrying capacity of the earth has worried policy makers as regards the world resources and sustainable population.

In the year 2000, it was estimated that the population of the world was growing by about 78 million per year at the rate of 1.4%, and was projected to rise to over 8 billion in 2025 (UNFPA, 1999). 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 (Cohen, 1998). Nigeria's population of 17.6 million in 1921 rose to about 140 million by the year 2006 National census. The total fertility has been described to still be on the high side like in many other developing countries of the world (NPC, 2000).

The traditional African society has been described to have preferences for many children for many reasons. Parents need many children in order to help them on the farm and other household activities. Sometimes, wealth of men was valued by the number of children he has. Sons preference has pushed many into extensive search for male child whom they believe could manage the family after their demise. Thus lots of socio cultural and even religious factors could be said to influence an African perception towards high fertility.

In all age groups, fertility rates are higher in rural than in urban areas, although the difference is relatively larger among teenagers aged 15-19. The age-specific fertility rate for women aged 15-19 is 75 in urban areas, compared with 126 in rural areas. Age-specific fertility rates among women aged 35-44 are almost one and half times higher in rural areas than in urban areas (NPC, 2000). This difference in total fertility rate between urban and rural communities further supports the fact that fertility is still higher in rural areas than urban areas in Nigeria. Uncontrolled high fertility may have effects on societal growth and development, and availability of forest products, food and water among other earth resources, thus contributing to global climatic changes.

Among socio demographic indices, age is very central to fertility issues, thus the age at first sexual intercourse, first marriage, and age at first birth are very important determinant of her risk of getting pregnant and the number of children she would have. In a study among Nigerian undergraduates, it was revealed that 87% were sexually active and 66% had more than one sex partners (Arowojolu *et al.*, 2000). The median age at first marriage in Nigeria was 18 years and the median age at first birth was 20, and generally, urban women marry approximately 2 years later than rural women and this includes 19 years in urban and 17 years in rural (NPC, 2000).

Researchers found that better educated women were more likely to use contraception (Edward, 1996). While husband's education also has a positive effect, it is less important than the wife's education (Beegle, 1995, Weinberger, 2001). In most surveyed countries, the more years of schooling women have completed, the lower their fertility; and women's educational attainment has a stronger effect on fertility than does men's education or other characteristics of households, such as wealth (Freedom *et al.*, 1975).

Determining fertility pattern and preferences and socio demographic determinants will provide demographic baseline for national governments, non governmental organizations (NGOs), national and international organizations working on fertility reduction programmes; and serve as advocacy tools for a more coordinated approach to finding a solution to the problems of soaring fertility pattern. The objective of this study is to determine and compare fertility pattern and socio demographic factors influencing fertility among rural and urban women in Southwestern Nigeria.

## METHODS

Osun State is situated in the Southwestern part 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).

This is a descriptive cross sectional, comparative study of fertility preference and socio demographic determinants of fertility among women of reproductive age in rural and urban communities of Osun state. Target population constituted all women of reproductive age 15 to 49 years in Osun State, Eligibility criteria was a woman of reproductive age group between 15 and 49 years, who were permanent residents (at least for five years) in the area in which she was found. Using the sample size calculation formula for the comparison of two rates (Olawuyi, 1996),  $n=512$  for each of rural and urban communities.

A multi stage sampling method was adopted in sample selection. In stage I, five (16.6%) of the 30 LGs in the state were selected by simple random sampling, using simple balloting. In stage II, one rural and one urban

community were selected per local government using simple random sampling (simple balloting) from a list of all communities in the selected local government areas designated as rural and urban, as obtained from the local government council headquarters/offices.. 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 were 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.

All eligible women met in the houses were interviewed with pre coded, pre tested interviewer administered questionnaires conducted by trained research assistants who could also speak local language. Five visits to each of the rural and urban setting were made. The questionnaires were administered by ten trained assistant interviewers. A vernacular version of the questionnaire was prepared for the uneducated respondents to reduce inter-observer variation in interpretation during the interview. Whenever a house was found to be empty, such houses were omitted and the next house to it was selected to replace it. Information on socioeconomic characteristics of the respondents as well as their fertility preferences were obtained. Ethical issues were settled in all appropriate quarters.

The SPSS Version 10.0 statistical package was used for data entry and analysis. Relevant frequency distributions, summary measures were done. The Chi-square 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  $\leq 0.05$  for all inferential analysis.

## RESULTS

Table 1 shows that the highest proportion 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 2 shows that the highest proportion 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  $18.0 \pm 3.9$  years for rural and  $19.5 \pm 5.0$  years for urban. About 44.9% of rural and 53.1% of urban respondents had between one and three pregnancies, while 41.6% of rural and 38.5% of urban respondents had between four and six pregnancies.

Mean number of total pregnancies was  $3.9 \pm 2.2$  pregnancies per woman for rural and  $3.1 \pm 1.9$  pregnancies per woman in urban setting. Spontaneous miscarriages of 1 to 3 episodes is commoner among rural (24.8%) than urban respondents (17.6%) Some respondents which include 5.2% of rural and 11.4% of urban respondents have procured an induced abortion.

About 45.8% and 44.0% of respondents in rural and urban settings respectively had their first births between 20 and 24 years of age, followed by age 15 to 19 years. The least proportion of respondents (0.8% of rural and 0% of urban) had first birth between 35 to 39 years of age. The mean age at first birth among rural respondents was  $20.8 \pm 3.7$  years and  $23.2 \pm 5.1$  years among urban respondents.

Number of children ever born by respondents favoured in both settings 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  $3.4 \pm 1.8$  births per woman in rural, and  $2.9 \pm 1.5$  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 3 shows that there was a significant association between desire to have more children (among both rural and urban respondents) and the level of education, age at first marriage and birth, number of children ever had, and total number of pregnancies. The mean age at first sexual intercourse was higher in urban (19.5years) than in rural (18.0 years), and people were significantly older at first sex in urban than in rural areas.

The mean difference between these mean age at first sexual intercourse was statistically significant ( $P=0.001$ ). Similarly, there were significant association between the relative locations (rural or urban) and the mean number of children ever had, mean age at marriage, mean number of living children lost, mean number of miscarriage and the mean age at first birth. Further logistics regression analysis shows 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

## DISCUSSION

In this study, fertility was higher in rural women than urban women evident by difference in mean number of pregnancies and 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). 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 (Moreno, 1993). Women in urban areas are more likely to have access to contraceptive messages and services compared to rural. In 59 of 60 surveyed developing countries, rates of contraceptive use among married women in rural areas are lower than in urban areas (Moreno, 1993).

Unlike NDHS, fertility has dropped significantly in this study. This could be attributed to step 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.

The difference in the mean number of total pregnancies recorded could be as a result of low use of contraception, unawareness of unsafe period, short period of exclusive breastfeeding and post partum abstinence and low level of education among rural respondents, all of which were findings from this study. The mean numbers of pregnancies and parity was still lower when compared with the Nigerian NDHS findings(NPC 2000) This had been supported by another study (Cleland and Mauldin, 1991). This difference in fertility rate could be due to the fact that contraceptive services are now increasingly accessible, affordable and available in our primary health care centers, coupled with the positively changing attitude of health workers towards family planning clients, and provision of qualitative family planning services including health education

More rural women desired more children as compared with urban respondents, and this has been supported by other studies (Nasra and Makhdoom, 1998, Isiugo-abanibe, 1997). A desire for more children could be based on cultural, has recently lost a living child, because of their natural love for children, and/or their perceived consideration of an ideal family size. In rural settings, cultural roles given to male child, and societal expectations that children must help out parents in household activities including farming and household has prompted many families into desiring more children. With polygamy, which seems to be fading out in urban settings as compared with rural, each wife would want to bear her own desired number of children for her husband since in the African setting, it could be a factor in future inheritance of properties of household head when he eventually dies.

The age at first sexual intercourse, first marriage and first births were higher in urban than rural respondents and thee differences were also statistically significant. This has been supported by other studies (NPC, 1999; Arowojolu et al, 2000). Marriage is one of the principal proximate determinants of fertility. Most of both urban and rural respondents were married. This finding agreed with the NDHS in which 70% of women of reproductive age were found to be married (NPC, 2000).

The fertility implication of this is that it is believed that sexual relations were virtually established as the married women live and have sexual intercourse with their husbands, and this might result in pregnancy and childbearing.

The age at first marriage may be a pointer to the age at which a woman would have her first birth. In Nigeria, marriage is a social obligation and most births occur within wedlock. Whether or not the start of marriage

coincides with the initiation of sexual intercourse and thus the beginning of exposure to the risk of pregnancy, first marriage is a leading social and demographic indicator of the exposure of women to the risk of pregnancy, especially in the case of low levels of contraceptive use, and, therefore, is important for an understanding of fertility.

Compared to rural women, women in urban settings stayed longer before they get marriage. This may be as a result of longer search for better education, white collar jobs and establishing themselves in business towards self sustainability. The length of time, women are exposed to the risk of child bearing affects the number of children women potentially can bear. Thus increase in marriage age can play a vital role in reducing fertility levels, as it reduces the period of exposure to child bearing. This then follows that populations in which age at marriage is low tend to be populations with early childbearing and high fertility.

As in this study, better educated women were found to have lower fertility (Kirk and Pillet, 1998; Barbieri, 1994). 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. This is supported by a study that described development especially access to quality education, as the best formula for reducing fertility in poor countries. This has been supported by other studies (Bankole, 1995). The disparity in education-parity status could be explained by the fact that better-educated women are more likely to live in urban areas, may have broader knowledge of reproduction, higher socioeconomic status, less fatalistic attitudes towards reproduction and more favourable attitude towards contraception than do less educated women. Arguments that better educated women are more likely to use contraceptives could be supported by other studies (Edward, 1996; NPC, 1999).

Some religious sects were found to be associated with high fertility Roman Catholic churches forbid use of contraceptives by her adherents. Islamic religion on its own side encourages many children through its positive inclination towards polygamy. All these support high fertility that may be found among adherents of these religious groups. The Islamic religion encouraged up to four wives, a practice that significantly contributed to a large family size and a rapid population growth among Muslims.

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TABLE 1: Socio-demographic 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 2: Pattern of fertility of respondents by location.

Variable	Rural n (%)	Urban n (%)
Reported 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)
Total no of pregnancies ever had	(N=512)	(N=512)
0	7(1.4)	20(3.9)
1-3	230(44.9)	272(53.1)
4-6	213(41.6)	197(38.5)
7-9	49(9.6)	19(3.7)
10 and above	13(2.5)	4(0.8)
Pattern of spontaneous miscarriages	(N=498)	(N=493)
0	372(74.6)	405(82.4)
1-3	124(24.8)	87(17.6)
4-6	2(0.4)	-
Pattern of induced abortions	(N=482)	(N=491)
Yes	25(5.2)	56(11.4)
No	457(94.8)	435(88.6)
Age at first birth in years	(N=480)	(N=461)
15-19	204(40.8)	102(21.3)
20-24	229(45.8)	211(44.0)
25-29	53(10.6)	124(25.8)
30-34	10(2.0)	34(7.1)
35-39	4(0.8)	-
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)
No of children desired	(N=288)	(N=257)
One child	49(19.4)	86(34.3)
2 children	94(37.3)	109(43.4)
3 children	62(23.3)	101 (40.1)
>3 children	45 (17.9)	62(24.2)



Table 3 Association between selected fertility determinants and desire to have more children, and mean differences between locations

Determinants)	Rural N (%)	Urban N (%)	Test	P value
Association with a desire to have more children	Freq/%	Freq/%	X <sup>2</sup> value	
Level of education	47(16.3)	18(7.0)	72.743	0.001
Age at first birth	15-19 2(0.7)	2(0.8)	54.585	0.001
	30-34 27(9.4)	62(25.2)		
No of children ever born	1-3 195(67.7)	217(85.1)	26.928	0.000
	7-9 8(2.8)	0		
Total pregnancy	1-3 178(61.8)	196(79.7)	31.175	0.000
	7-9 15(5.2)	0		
Mean differences between locations	Mean(Rural)	Mean(urban)	t value	P value
Age last birthday	31.6(+9.6)	33.0(+9.0)	2.539	0.011
Age at first sexual intercourse	18.0(+3.9)	19.5(+5.0)	5.108	0.001
Total pregnancy	3.9(+2.2)	3.1(+1.9)	5.721	0.001
No of miscarriages	1.6(+0.8)	0.2(+0.5)	22.854	0.001
Age at first marriage	19.6(+3.3)	22.6(-3.9)	12.681	0.000
Age at first birth	20.8(+3.7)	23.2(+5.1)	8.330	0.001
No of children ever	3.4(+1.8)	2.9(+1.5)	4.873	0.010
Lost children	0.3(+0.7)	0.1(+0.4)	3.794	0.000

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