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Birth Spacing Practices in Bayelsa State of Nigeria.A Cross Sectional Study of Antenatal Women in a Tertiary Centre

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Background: Birth spacing is the time interval between two successive live births. Optimal birth spacing improves the health status of women and also under-five child survival in developing countries. Objective: To investigate birth spacing practices and its' determinants in a Tertiary centre in Bayelsa state. Methodology: This is a descriptive cross sectional study of women attending Antenatal Clinic at the Federal Medical Centre, Yenagoa, Bayelsa state, Nigeria. 216 selfadministered structured questionnaires were distributed to respondents. One hundred and ninetyeight (198) were returned and additional 21 questionnaires were removed from the analysis because of incomplete filling. Hence, the respondent rate of this study was 81.5% (176 respondents). The results were analyzed with SPSS windows version 20. Results: Overwhelming majority of respondents, 84 % were within the age range of 21-35 years and a mean age of 29.4 ±2.2 years. The mean interpregnancy interval was 32 months. The mean child per woman was 2. Our contraceptive prevalence was 12.5%. 84 (42.6%) think ideal family size should be four children, 28 (15.9%) think it should be three children and 31 (17.6) ideal family size can be as many as God gives. There was no statistical significance between education, religion, parity, family income and family planning. Conclusion: By WHO criteria, the birth spacing practices in this study was good, however, it coincided with a very low contraceptive prevalence. Therefore, more advocacies by Healthcare providers on contraceptives will increase uptake and also erode erroneous cultural and religious beliefs about child bearing.

Keywords: Birth spacing, Total Fertility Rate, Contraceptive usage, Ideal family size

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Introduction

Birth spacing is the time interval between two successive live births.[1]The World Health Organization has recommended that the interval between pregnancies should be at least 24 months [2] Birth intervals of less than 24 months[3] or greater than 60 months are both associated with poor maternal and child outcomes.[4]

Poor birth spacing is a direct reflection of the Total Fertility Rate (TFR) in a community. Nigeria has one of the highest Total Fertility Rate (TFR) in the world. According to the 2013 Nigerian Demographic and Health Survey (NDHS), the TFR stood at 5.5 children per woman. [5] Though, the total fertility rate has declined steadily over the years from 6.0 births per woman as estimated in the 1990 NDHS [6] to 5.5 births per woman in the 2013 NHDS. [1]This is by no means astronomically high, as high fertility rate directly translates to large family size and national overpopulation figures.[5]The problem of high total fertility rate is compounded by the fact that Nigeria is amongst countries with the lowest contraceptive patronage in the world[1]According to the 2013 NDHS, the contraceptive prevalence amongst married women in Nigeria stood at 15%. [5]. Contraceptive patronage are some of the measures practiced worldwide todelay and space child bearing and to reduce family size.[7]

Birth spacing is one of the measures to improve under-five child survival in developing countries, Nigeria inclusive. There is a wide disparity between developing and developed countries in terms of child survival in infancy. The risk of a child dying in the first year of life is about fourteen times in developing countries compared to developed countries.[7, 8]

Birth spacing improves the health status of the woman as it allows her to recover from one pregnancy before embarking on the next one. It has also been known to improve the nutritional and health status of the child from theimmediate past pregnancy.Other advantages borne out of child spacing include allowing next pregnancies the likelihood of being carried to advanced gestation and growth before delivery, reduce competition between children for breastfeeding and available food in the family.[6] It also allows the woman time to engage herself in other life profitable endeavors that will improve family income like taking Up employment, business, furthering of education, if this has not been done. On the other hand, research has also shown that children from large families are associated with lower IQ scores compared with their counterparts from smaller families, worse employment outcomes and more likely to be involved in risky behavior. Age difference between siblings (spacing) is positively associated with educational achievement in favour of older compared to younger siblings.[8]

This study therefore aims to investigate birth spacing practices and its' determinants in a Tertiary centre in Bayelsa state. Also, means of achieving this goal and to ascertain where health care providers should direct advocacy programmes are paramount.

Methodology

This is a descriptive cross sectional study of women attending Antenatal Clinic at the Federal Medical Centre, Yenagoa, Bayelsa state.Bayelsa state is a southern state of Nigeria in the core of the Niger Delta, between Rivers state and Delta state.A random sampling in which a sample frame of the Antenatal women in the department of Obstetrics and Gynaecologywas obtained.

Onlybooked antenatal patients in the Federal Medical Centre, Yenagoa were included. Excluded were primigravidae and health personnel.A self-administered structured questionnaire to avoid bias was used for the study.

The sample size was derived as follows from the target population;

Contraceptive prevalence rate of 15% in Nigeria was used. Precision (i.e. margin of sampling error) tolerated was set at 5%, at 95% confidence interval, using the formula for cross sectional study

$$N = pq / (e/1.96)^2$$

Where n = sample size

P = prevalence rate = 15%

Q = 100 - p = 100 - 15 = 85%

E = margin of sampling error tolerated at 95% confidence interval = 5%

Hence, $n = 15 \times 85/(5/1.96)^2$

Adjusting for an attrition or non-compliance rate of 10%

Hence, 10% attrition = 10/100 X 196 = 19.6

Thus, the adjusted sample size = 196 + 19.6 = 215.6

Working sample size \approx 216 subjects

Data Analysis: The data was processed using SPSS windows version 20. Summary statistics, sample frequencies and crossed tabulations was then computed.

Results

A total of 216 self-administered structured questionnaires were distributed to respondents. One hundred and ninety-eight (198) were returned and additional 21 questionnaires were removed from the analysis because of incomplete filling. Hence, the respondent rate of this study was 81.5% (176 respondents).

Six (3.4%) were 15-20years, 34(19.3%) were 21-25years. Twenty-five (14.2%) were Catholics, 26(14.8%) Anglicans, 117 (66.5%) were Pentecostal. Two (1.1%) were Muslim; 9(5.1%) single, 161(91.5%) married. Seventywere two(40.9%) had secondary education while 90 (51.1%)had tertiary education. Eighty three(47.2%) were Para 1, 46(26.1%) Para 2.

Fifty-nine (33.5%) husbands earn less than N500000 per annum, 52(29.5%) earn 1 million per annum, 24(13.6%) earn 2million per annum, 16(9.1%) had 3million per annum. Sixty-two (35.2%) of the women earn 1million or less per annum, 9(5.1%) earn 2 million per annum.

See Table 1 for socio-demographic characteristics of respondents.

One hundred respondents (56.8%) stated that they plan their pregnancies while 76(43.2%) stated that they do not plan their pregnancies.

See table 2 for birth spacing practice among Respondents.

The mean interpregnancy interval for the study was 2.7 ± 0.2 years (32 ± 2 months) The mean child per woman (fecundity) was 2.Thirty three respondents (18.8%) had an interpregnancy interval of 1year, 77(43.8%) was 2years, 37(21.0%) was 3years, 14(8.0%) was 4years.

See Table 3 for Inter-pregnancy interval among respondents.

Twenty-nine respondents (16.5%) spaced their pregnancy because they wanted it so, 9(5.1%) were on contraceptives, 18(10.2%) pregnancy did not just come, 8(4.5%) were in school.Twenty-two respondents (12.5%) used contraceptive during birth spacing while 154(87.5%) did not; 6(3.4%) used male condom, 3(1.7%) used pills, 7(4.0%) used postinor.

See Table 5 for Pattern of contraception used during birth spacing.

Seventy respondents (39.8%) believed in having as many children as God gives while 106(60.2%) do not; 57(32.4%) stated religious disapproval of contraceptive while 119(67.6%) did not; 65(36.9%) stated cultural disapproval of contraceptive while 111(63.1%) did not.

See Table 6 for factors influencing contraceptive use and birth spacing among respondent

Zero of respondents 0(0.0%) believed an ideal family size should be made up of a child, 2(1.1%) believed it should be 2 children, 28(15.9%) believed it should be 3 children, 75(42.6%) believed it should be 4 children.

See Table 7 for concept of an ideal family size.

At 95% confidence interval, P > 0.05, there was no statistical significant relationship between sociodemographic distribution of respondents and planning of pregnancy.

See Table 8 for statistical significance of the relationship between socio-demographic distribution of respondents and family planning.

At 95% confidence interval, P > 0.05, there was no statistical significant relationship between use of contraceptives and planning of pregnancy among respondents

See Table 9 for relationship between use of contraceptives and planning of pregnancy.

Table 1: Socio-demographic Distribution ofRespondents

Variable	Frequency (f)	Percent (%)
Age:		
15-20	6	3.4
21-25	34	19.3
26-30	62	35.2

31-35	53	30.1
36-40	19	10.8
41-45	2	1.1
Total	176	99.9
Religion:		
Catholic	25	14.2
Anglican	26	14.8
Pentecostal	117	66.5
Muslim	2	1.1
Jehovah's witness	5	2.8
Traditional	1	0.6
Total	176	100
Marital Status:	_	
Single	9	5.1
Married	161	91.5
Divorced/separated	3	1.7
Widow	3	1.7
Total	176	100
Educational Status:		
No education	4	2.3
Primary	10	5.7
Secondary	72	40.9
Tertiary	90	51.1
Total	176	100
Parity:		
1	83	47.2
2	46	26.1
3	26	14.8
4	13	7.4
5	3	1.7
6	2	1.1
7 and above	3	1.7
Total	176	100
Income Per Annum (Respondent's Hu	usband):	
Less than 500000	59	33.5
1 million	52	29.5
2 million	24	13.6
3 million	16	9.1
4 million	5	2.8
5 million or more	2	1 7
	17	9.7
	17	9.7
	176	0.0
Income per Appum (Despondents):	170	55.5
1 million or loss	62	25.2
	02	55.2
	93	5.1 1./
	3	1.7
	32	18.2
	67	38.1
Iotal	176	100

Table 2: Birth Spacing Practice amongRespondents

Plan Pregnancy	Frequency (f)	Percent (%)
Yes	100	56.8
No	76	43.2
Total	176	100

Table 3: Inter-pregnancy Interval amongRespondents

Inter-pregnancy interval	Frequency (f)	Percent (%)
1year	33	18.8
2years	77	43.8
3years	37	21.0
4years	14	8.0
5years	5	2.8
6years	1	0.6
7yeas	3	1.7
8years	1	0.6
9years and above	5	2.8
Total	176	101

Table 4: Reasons for Birth Spacing amongRespondents

Variables	Frequency (f)	Percent (%)
You wanted it so	29	16.5
You were on contraceptives	9	5.1
The pregnancy did not just come	18	10.2
You were in school	8	4.5
Separation from husband	2	1.1
Had miscarriage	11	6.3
None	99	56.3
Total	176	100

Table 5: Pattern of Contraception used duringBirth Spacing among Respondents

Variable	Frequency (f)	Percent (%)				
Uses Contraceptive:						
Yes	22	12.5				
No	154	87.5				
Types of Contraceptive	used:					
Male condom	6	3.4				
Pills	3	1.7				
Postinor	7	4.0				
Coil	1	0.6				
Injectables	5	2.8				
None	154	87.5				
Practice Exclusive Breast Feeding:						
Yes	87	49.4				
No	89	50.6				

Table 6: Factors influencing contraceptive useand birth spacing among respondents

i					
Variables	Frequency (f)	Percent (%)			
Belief to have as m	any children as God desires:				
Yes	70	39.8			
No	106	60.2			
Religious disapprov	al of contraceptive use:				
Yes	57	32.4			
No	119	67.6			
Cultural disapprova	al of contraceptive use:				
Yes	65	36.9			
No	111	63.1			
Cultural beliefs in g	jods to control fertility:				
Yes	29	16.5			
No	147	83.5			
Have been remarried:					
Yes	26	14.8			
No	150	85.2			

Table 7: Concept of an Ideal Family Size

No. of Children	Frequency (f)	Percent (%)
1	0	0.0
2	2	1.1
3	28	15.9
4	84	42.6
5	7529	16.5
6	11	6.3
As many as God gives	31	17.6

Table8:RelationshipbetweenSocio-demographicDistribution of Respondents andBirthSpacing

Variable	Do you Plan your Pregnancy		X2	Df	P-value
	Yes	No			
Age:					
15-20	3	3			
21-25	23	11			
26-30	32	30	3.426	5	0.635
31-35	32	21			
36-40	9	10			
41-45	1	1			
Religion:					
Catholic	16	9			
Anglican	16	10	4.806	5	0.440
Pentecostal	65	52			
Muslim	0	2			
Jehovah's witness	2	3			
Traditional	1	0			
Marital Status:					
Single	3	6			
Married	93	68	2.319	3	0.509

Divorced/separated	2	1			
Widow	2	1			
Educational Status:					
No education	3	1			
Primary	4	6	2.847	3	0.416
Secondary	38	34			
Tertiary	55	35			
Parity:					
1	45	38			
2	32	14			
3	15	11	6.456	6	0.374
4	5	8			
5	1	2			
6	1	1			
7 and above	1	2			
Income Per Annum:					
Less than 500000	29	30			
1 million	29	23			
2 million	16	8	6.198	6	0.401
3 million	11	5			
4 million	2	3			
5 million or more	3	0			
Unemployed	10	7			
Income per Annum:					
1 million or less	37	25			
2 million	6	3	1.962	5	0.854
3 million	1	2			
4 million	2	1			
Unemployed	16	16			
No income	38	29			

At 95% confidence interval, P > 0.05, there was no statistical significant relationship between sociodemographic distribution of respondents and planning of pregnancy.

Table 9: Relationship between ContraceptiveUse and Pregnancy Planning amongRespondents

Variable	Plan Pregnancy		X2	df	P-value
	Yes	No			
Takes contraceptives in between Pregnancy:					
Yes	16	6	2.594	1	0.107
No	84	70			

At 95% confidence interval, P > 0.05, there was no statistical significant relationship between use of contraceptives and planning of pregnancy among respondents.

Discussion

The mean age of the study group was 29.4 ± 2.2 years.With such long child bearing career ahead of them, they were supposed to patronize modern contraception. However our results from the study were to the contrary as almost half of respondents did not plan their pregnancies, the contraceptive prevalence among the study group was just 12.5 % which is lower than the National average of contraceptive prevalence of 15% among married women.[1a]One issue peculiar to Nigeria is that in the first year post-partum, there is an unmet need for contraception at point of delivery. This is because only 36% of pregnant women deliver in health facilities while those who delivered outside a health facility loose the opportunity for counseling and modern contraceptive acceptance.[5, 9] At 95% confidence interval, P > 0.05, there was no statistical significant relationship between use of contraceptives and planning of pregnancy among respondents. This contraceptive prevalence among pregnant women in our study is lower than that of contraceptive use of 70% before the index pregnancy in a study done in Myanmar. [1]Contraceptive use before pregnancy has been shown to increase significantly the birth intervals in studies done in Bangladesh.[9]

The mean pregnancy interval of 32 months in this study was similar to that done in Myanmar[1] which was 33 months and the whole of Asian continent which was 36 months [10] but lower than that of neighbouring Ghana with a median birth interval of 40 months.[11]Abdel Aziem A. Aliet al[12] reported 26 months in Sudan which was lower than ours. In Nigeria, only 24 % of women give birth at \leq 24months intervals.[13] With the WHO criteria of birth spacing intervals of at least 24 months but not later than 60 months, women in this study have good child spacing practices, however, this is unrelated to their poor contraceptive patronage. Considering the mean age of 29.4 ±2.2 years and then the small sample size of this study, the coincidence of the good child spacing practices and poor contraceptive patronage can be explained. Our study did not cover much of elderly (> 35 years) multiparous and ground multiparous women. Only 19 (11.8%) of the 196 respondents were elderly.

The mean child per woman in the study was 2. This is a better outcome compared with total fertility rate

In Nigeria of 5.5 children / woman [5] and in Ghana of 3.1-4.9 children per woman.[14] The average total fertility rate for the sub-Saharan African region is 5.1 children per woman which is one of the highest in any of the sub regions of the world.[15]

Overwhelming majority of respondents was of the Pentecostal faith. Such religious affiliations have been known to interfere with decision taking in matters related to reproductive health in Africa and in the world in general.[16, 17]The study group was highly educated.Formal education has been a veritable tool through which changes in fertility behavior can be learned. Both the women and their husbands were poorly empowered as majority of respondents earn far below the middle class in Nigeria. Poor family income is associated with high fertility rate because in this circumstance, there is higher infant mortality due to lack of resources and adequate health care and the need by couples to replace dead children. [16]However, from the study, there was no statistical significantrelationship between religion, education, family income and family planning

Almost halve of respondents did not plan their families and indirectly birth spacing. There was paucity of knowledge regarding family and birth spacing as 56% of respondents did not give any reasons for not embracing family planning and others gave vague reasons such as they want pregnancies to come naturally or they spaced didn't pregnancies because they just get pregnant.Only about half of respondents participated in exclusive breastfeeding with its child spacing qualities and nutritional advantages to the infant and prevention of infection.[18]

Nigeria has one of the poorest contraceptive patronagesin the world. We are perhaps far from improvement soon. This is because issues identified from the study have militating effects against family planning and birth spacing including erroneous beliefs that a couple can have as many children as God has given them, religious beliefs against contraceptive use, cultural beliefs that traditional gods control fertility. This was supported byCaldwell JC and Caldwell P in 1987.[18]Another factor identified in the study as acting against birth spacing is the issue of remarriage. Women will like to continue their child bearing career when they change husbands. The concept of an ideal family size by 46% respondents was four children. This thinking must have been borne out of a national recommendation of four children per couple, though this is not strictly regulated in Nigeria.

Conclusion

By WHO criteria, the birth spacing practices in this study was good, however, it coincided with a very low contraceptive prevalence. Therefore, more advocacies by Healthcare providers on contraceptives will increase uptake and erode erroneous cultural and religious beliefs about child bearing.

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