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Individual and Household Factors influencing Voluntary Delayed Childbearing among Women in Osun State, Nigeria

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Abstract

This study examined the individual and household factors influencing voluntary delayed childbearing among women in Osun State, Nigeria. The sample size was 282 women aged 35-49 years. The outcome variable was voluntary delayed childbearing dichotomised into yes or no. The explanatory variables were sets of individual and household characteristics. Data were analysed using Stata 14. Findings show that 18.8% of the women had voluntarily delayed childbearing. Late age at first marriage (AOR=1.698, p<0.01; 95% CI: 1.494-1.929), higher education (AOR=2.235, p<0.01; 95% CI: 1.799-2.776), higher monthly income (AOR=2.622, p<0.01; 95% CI: 1.850-3.714), participation in household decisions (AOR=1.224, p<0.05; 95% CI: 1.074-1.394), and residing in households with highest wealth index (AOR=1.252, p<0.05; 95% CI: 1.073-1.461) were significant individual and household factors influencing voluntary delayed childbearing. The study suggests the development of a Family Health Strategy to be integrated into the Osun State Development Plan (2019-2028).

Keywords: Childbearing, voluntary delayed childbearing, women, reproductive health, Osun state

Introduction

Childbearing refers to the process of giving birth to children as well as nursing children. The key activities in childbearing include pregnancy, delivery and early nursing of the newborn. Childbearing across the world not only have direct effects on population growth, but it also enhances women's empowerment and position within families and in the society (Makinde, 2004; Yao, Chan, & Chan, 2017). In Nigeria, childbearing is a cultural imperative because fertility is valued and celebrated while infertility attracts social stigma, sanctions, and gender-based violence in many instances (Dimka & Dein, 2013; Ibisomi & Mudege, 2014; Aduloju, Olagbuji, Olofinbiyi, & Awoleke, 2015; Iliyasu *et al*., 2016). In most parts of the country, women commence childbearing early in their reproductive life particularly in Northern Nigeria (Fagbamigbe & Idemudia, 2016; Cortex, Saadat, Marinda, & Odutolu, 2016; Alabi, Omisakin, & Alabi, 2018; Maigari, 2018). Based on the recent Demographic and Health Survey in the country, most Nigerian women have commenced childbearing before attaining age 21 (National Population Commission [NPC] & ICF, 2019), which may be one of the reasons why the fertility level remain high in the country.

However, in the last three decades, a growing trend of voluntary postponement of childbearing has emerged among women in the country (Ojule, Ibe, & Fiebai, 2011; Olusanya & Solanke, 2012). This phenomenon has been described in the literature (Johnson & Tough, 2012; Cooke, Mills, & Lavender, 2012; Mattews, Brady, & Hamilton, 2014) as voluntary delayed childbearing (postponement of first pregnancy or first childbirth till the age of thirty-five years or older age). Substantial evidence has shown that women voluntarily delay childbearing for several reasons including the need to attain a higher level of education, advance their career and gain some level of financial independence (Bhrolchain & Beaujouan, 2012; Amin & Behrman, 2014; Marphatia *et al*., 2020). However, if this trend and pattern continue, some women may end up with the problem of childlessness or be unable to attain their preferred fertility desire (Koert & Dniluk, 2017). Besides, the national population may suffer a gradual decline if the trend is not reversed. Voluntary delayed childbearing has been traced to more developed countries of Europe and North America (Johnson & Tough, 2012; Schmidt, Sobotka, Bentzen & Anderson, 2012; Mattews *et al*., 2014; Nieto, Barrabes, Martinez, Prat, & Zantop, 2019). This trend in voluntary delayed childbearing, especially among women, is, however, gaining momentum and becoming a reproductive norm in developing countries, thereby requiring further investigation of the explanatory factors.

Existing studies on voluntary delayed childbearing have centered more on the adverse reproductive health outcomes particularly advanced maternal age pregnancy (Ogawa *et al*., 2017; Gravio *et al*., 2018; Londero, Rossetti, Pittini, Cagnacci, & Driul, 2019; Mehari *et al*., 2020) associated with voluntary delayed childbearing with insufficient attention on the associated social determinants. Though a recent Nigerian study (Solanke, Salau, Popoola, Adebiyi, & Ajao, 2019) investigated the individual and contextual influences on voluntary delayed childbearing in the country, however, the study did not pay sufficient attention to the role household factors play in the prevalence of voluntary delayed childbearing among women. Evidence abounds that the households in which men and women live and who they live with matters in their life courses (Speizer, Lance, Verma, & Benson, 2015) and also influence their reproductive decisions (Sofolahan & Airhihenbuwa, 2012). The general objective of the study was thus to examine the individual and household factors influencing voluntary delayed childbearing among women in Osun State, Nigeria.

Findings in the study may provide inputs for repositioning the development of family health component of Osun State Development Plan (2019-2028) currently being implemented in the state (Ministry of Economic, Planning, Budget and Development, 2018). The study was guided by the research question: what individual and household factors influence voluntary delayed childbearing in Osun State, Southwest Nigeria? The Second Demographic Transition (SDT) Theory underpinned the study. The theory asserts that continued change in societal characteristics such as a decline in proportion getting married, rise in age at first marriage, rise in cohabitation, rise in divorce, rise in extra-marital fertility, availability of efficient contraception, rise in female education and autonomy, etc. may lead to a decline in the fertility level across the world (Lesthaeghe, 2010). Many of these features have emerged with varying prevalence in Nigeria (Ntoimo & Isiugo-Abanihe, 2013; Ntoimo, 2014).

Method

Study Design and Study Area

This was a cross-sectional study based on quantitative methods. The study was undertaken in three Local Government Areas (LGAs) in Osun State, namely, Ede South, Ife Central and Odo Otin LGAs randomly selected respectively from Osun West, Osun East and Osun Central Senatorial Districts of the state to ensure equal representation of the districts. The study was implemented in the Headquarter of the selected LGAs. These are Ede, Ile-Ife and Okuku**.** Osun state has an estimated population of 4,974,919 in 2018 based on a 3.18 annual growth rate. More than half of the populations are under age 15 which increase the burden of social services such as education, employment and health in the state. There are slightly more males than females in the

population of Osun state (Ministry of Economic Planning, Budget and Development, 2018). The 2018 Nigeria Demographic and Health Survey (NDHS) reveals that Osun state has a Total Fertility Rate (TFR) of 3.8 children per woman which is one of the lowest in the Southwest zone of Nigeria. The state also has a population median age of 22.3 years which is equally one of the lowest in the Southwest. However, the proportion of women who attained more than secondary education is also one of the lowest in the Southwest zone (NPC & ICF, 2019). These features may shape the prevalence of voluntary delayed childbearing in the state.

Study Population, Sampling and Sample Size

The target population for this study comprised of women age 35-49 years in Osun State, Nigeria. This age range is the relevant age for the measurement of voluntary delayed childbearing (Johnson & Tough, 2012; Cooke *et al*., 2012; Mattews *et al*., 2014). Women covered in the survey were currently married irrespective of age at first marriage and employed either in the formal (public or private establishment with ten or more employees) or informal (self-employed and those who do jobs that are not subject to national labour legislation) sectors of the economy. This criterion was important because it permits the assessment of household characteristics of the survey participants. This study adopted a multi-stage sampling technique. In the first stage, women in the state were stratified into the formal and informal sector. A list of formal establishments in the three selected LGA Headquarters was compiled from which one establishment was randomly selected for the study. Also, a list of markets in the LGA was obtained from the LGA office from which one market was randomly selected for the study.

In the second stage, the selected establishments and markets were visited for introducing the survey and obtaining the consent of eligible women. The women who consented were listed. The resulting list served as the sampling frame for the selection of participants. Finally, in the third stage, random selection was made using the sampling frame. The sample size was determined by the application of a sample size determination formula: $n=Z^2pq/d^2$, where n = sample size, Z = 95% (Standard Score) for normal distribution, p = 0.092 (the percent of women aged 25-49 years in Nigeria who have never given birth in a recent national survey, q = 0.908 (1-p=q), d = 0.05 (Level of significance). The resulting sample size was 282 women aged 35-49 years or older.

Data Collection

Data for this study were collected through a structured questionnaire. The questionnaire was divided into four different sections, namely, socio-economic characteristics of the respondents, women's autonomy, voluntary delayed childbearing, and associated factors. The questionnaire was self-administered by educated respondents while interviews were held with non-educated participants. Before the actual fieldwork, the questionnaire was tested at the Central Market of the Obafemi Awolowo University, Ile-Ife. The reliability of the questionnaire was established using the Cronbach's alpha test which indicated that the instrument was valid and reliable.

Research Variables

The outcome variable in the study was voluntary delayed childbearing. This was dichotomised into yes, that is delayed and coded '1' and no, that is not delayed and coded '0'. The delayed category refers to the proportion of women who voluntarily delayed their first pregnancy or childbirth till age 35 or older ages. This measurement is consistent with the description of voluntary delayed childbearing in the literature (Johnson & Tough, 2012; Cooke *et al*., 2012; Mattews *et al*., 2014). This was the category of interest in the study. The explanatory variables are sets of individual and household characteristics. The individual characteristics examined are current age (35-44 years and 45 years or older), age at first marriage (Less than 20, 20-24 years, 25-29 years, 30-34 years and 35 years or older), religious affiliation (Christianity, Islam and Traditional/others), maternal education (none, primary, secondary and higher), ideal family size (less than 4 and 5 or more), employment status (employed and under unemployed-those who reported that their present job is not utilising their actual skill), sector of employment (formal and informal), and monthly

income (less than #30,000, #31,000-50,000, #51,000-#100,000, #101,000-#150,000 and #151,000 and above). The household characteristics examined are partner's age at first marriage (25-34 years, 35-44 years, and 45 years or older), family type (monogamy, polygyny and singlehood), and partner's education (none, primary, secondary and higher), household decision-making (no participation or participates), spousal discussion on family planning matters (no or yes), and household wealth index (lowest, middle and high). Household wealth index was derived by considering ownership of household items including radio, television, Digital Satellite Television (DSTV), refrigerator, gas cooker, generating set, air conditioner, electronic fan, computer, motorcycle and cars. This was done by subjecting the listed items to factor analysis using principal component analysis. Using this method, the three categories of wealth index were generated.

Data Analysis

Data were analysed at three levels using Stata version 14. Descriptive statistics using frequency distribution and percentages were used to present sample characteristics including the prevalence of voluntary delayed childbearing. At the second level, the research variables were cross-tabulated while the chi-square test was used to examine the association between the research variables. Any variable that did not reveal statistical significance set at $p<0.05$ was not included in the next level of analysis. At the third level, the binary logistic regression model was estimated using the Adjusted Odds Ratio (AOR) with 95% confidence interval. Two binary logistic models were fitted in the study. Model 1 included the individual characteristics while Model 2 included both individual and household characteristics.

Ethical Review

The survey protocol, research instrument and methodology were approved by the Ethics and Research Committee of the Institute of Public Health, Obafemi Awolowo University, Ile-Ife (HREC NO: IPHOAU/12/1391). The analyses are presented in anonymised forms.

Results

Table 1 presents the respondents' profile. Nearly two-thirds (64.5%) of the respondents are currently aged between 35-44 years compared to more than one-third (35.5%) who were in the extremely advanced age group of 45-49 years. The dominant age interval at first marriage among the respondents was the 25-29 years of age group (34.8%). Only 6.4% of the women delayed first marriage till age 35 years and above. More than a quarter of the respondents (27.7%) commenced motherhood within the age group 20-24 years while 18.8% of the women voluntarily delayed childbearing till age 35 years or above. More than two-thirds (67.0%) of the respondents were Christian women compared to 28.0% who were Muslim women. The majority (70.2%) of the respondents attained higher education while more than one-fifth of the respondents attained secondary education. The majority (75.2%) of the respondents desired five or more children compared to the 24.8% who desired four or fewer children. Virtually all the respondents were employed. However, the majority (64.9%) of the respondents were in the formal sector of the economy. The dominant monthly income among the respondents was the #51,000-#100,000 monthly income groups (29.8%).

The majority (64.5%) of respondents partners were aged 45 years or older but nearly one-third (32.3%) of respondents' partners were aged 35-44 years at first marriage. The majority of the respondents (69.5%) were in monogamous unions compared to 17.4% who were in polygynous unions. The majorities of respondents' partners were employed and attained higher educational levels. The majority (86.9%) of the women participated in household decision-making. The majority of the respondents discussed family planning matters with their spouses. The distribution of respondents by household wealth index reveals that the proportions of respondents in the three wealth groups were nearly equal.

Table 1: Socio-demographic characteristics of Respondents

Characteristic	Frequency (n=282)	Percentage (100.0)	Characteristic	Frequency (n=282)	Percentage (100.0)
Current age			**Partners' age at first marriage**		
35-44 years	182	64.5	25-34 years	9	3.2
45+	100	35.5	35-44 years	91	32.2
Age at first marriage			45 years+	182	64.5
Less than 20 years	35	12.4	**Family type**		
20-24 years	78	27.7	Monogamy	196	69.5
25-29 years	98	34.8	Polygamy	49	17.4
30-34 years	53	18.8	Single parent	37	13.1
35 years+	18	6.4	**Partners' employment status**		
Religious affiliation			Employed	198	70.2
Christianity	189	67	Unemployed	84	29.8
Islam	79	28	**Partners' level of education**		
Traditional	14	5	None	7	2.5
Maternal education			Primary	7	2.5
None	6	2.1	Secondary	52	18.4
Primary	16	5.7	Higher education	216	76.6
Secondary	62	22	**Household decision-making**		
Higher education	198	70.2	No participate	37	13.1
Ideal family size			Participates	245	86.9
Four or less	70	24.8	**Spousal discussion of family planning related-matters**		
Five or more	212	75.2	No	90	31.9
Employment status			Yes	192	68.1
Employed	276	97.9	**Household wealth index**		
Under employed	6	2.1	Lowest	94	33.3
Sector of employment			Middle	95	33.7
Formal sector	179	64.9	High	93	33.0
Informal sector	97	35.1	**Voluntary delayed childbearing**		
Monthly income			Yes	53	18.8
Less than #30,000	54	19.1	No	229	81.2
#31,000-#50,000	64	22.7			
#51,000-#100,000	84	29.8			
#101,000-#150,000	36	12.8			
#151,001+	44	15.6			

Source: Fieldwork, 2019

Table 2 presents the associations between the research variables. The level of voluntary delayed childbearing was higher among younger women compared to women in extremely advanced age (17.0% vs. 23.0%). Increase in age at first marriage was associated with increases in the prevalence of voluntary delayed childbearing indicating a significant association (χ^2=119.0, p<0.01) between age at first marriage and voluntary delayed childbearing. The level of voluntary delayed childbearing was higher among Christian women compared to Muslim women (23.3% vs. 8.9%) as well as between Christian women and women practising traditional/other religions (23.3% vs. 14.3%) indicating a significant association (χ^2=7.8, p<0.05). Likewise, maternal education and voluntary delayed childbearing reveal significant association (χ^2=9.0, p<0.05) with increasing levels of voluntary delayed childbearing as educational attainment improves.

In contrast, monthly income was significantly associated with voluntary delayed childbearing (χ^2=11.6, p<0.05) with higher levels of voluntary delayed childbearing associated with higher monthly income. The level of voluntary delayed childbearing was higher among women who participated in household decision-making compared to women who did not participate in household decision-making (21.4% vs. 18.9%) indicating a significant association (χ^2=9.9, p<0.01) between household decision-making and voluntary delayed childbearing. Likewise, household wealth index was significantly associated with voluntary delayed childbearing (χ^2=17.3, p<0.01) with higher levels of voluntary delayed childbearing among women in relatively wealthier households.

Table 2: Bivariate associations of voluntary delayed childbearing and respondents' characteristics

Characteristic	Commencement of childbearing	
	Not delayed Freq. (%)	Delayed Freq. (%)
Current age group		
35-44 years	152 (83.0)	30 (17.0)
45 years or older	77 (77.0)	23 (23.0)
Statistic	χ^2 =2.9, p>0.05	
Age at first marriage		
Less than 20 years	33 (94.3)	2 (5.7)
20-24 years	76 (97.4)	2 (2.6)
25-29 years	89 (90.8)	9 (9.2)
30-34 years	31 (58.5)	22 (41.5)
35 years +	15 (83.3)	3 (16.7)
Statistic	χ^2 =119.0, p<0.01	
Religious affiliation		
Christianity	145 (76.7)	44 (23.3)
Islam	72 (91.1)	7 (8.9)
Traditional	12 (85.7)	2 (14.3)
Statistic	χ^2 =7.8, p<0.05	
Maternal education		
None	6 (100.0)	-
Primary	15 (93.8)	1 (6.3)
Secondary	56 (90.3)	6 (9.7)
Higher	152 (76.8)	46 (23.2)
Statistic	χ^2 =9.0, p<0.05	
Ideal family size		
Four or less	57 (81.4)	13 (18.6)
Five or more	172 (81.1)	40 (18.9)
Statistic	χ^2 =0.96, p>0.05	
Employment status		
Employed	224 (81.2)	52 (18.8)
Unemployed	5 (83.3)	1 (16.7)
Statistic	χ^2 =1.2, p>0.05	
Sector of employment		
Formal	140 (78.2)	39 (21.8)
Informal	84 (86.6)	13 (13.4)
Statistic	χ^2 =2.9, p>0.05	
Maternal monthly income		
Less than #30,000	47 (87.0)	7 (13.0)
#31,000-#50,000	55 (86.0)	9 (14.1)
#51,000-#100,000	72 (85.7)	12 (14.3)
#101,000-#150,000	24 (66.7)	12 (33.3)
#151,000+	31 (70.5)	13 (29.5)
Statistic	χ^2 =11.6, p<0.05	

Characteristic	Commencement of childbearing	
	Delayed Freq. (%)	Not delayed Freq. (%)
Partners' age group		
25-34 years	8 (88.9)	1 (11.1)
35-44 years	73 (80.2)	18 (19.8)
45 years +	148 (81.3)	34 (18.7)
Statistic	χ^2 =0.4, p>0.05	
Family type		
Monogamy	155 (79.1)	41 (20.9)
Polygyny	44 (89.8)	5 (10.2)
Single parent	30 (81.1)	7 (18.9)
Statistic	χ^2 =3.0, p>0.05	
Partners' employment status		
Employed	157 (79.3)	41 (20.7)
Unemployed	72 (85.7)	12 (14.3)
Statistic	χ^2 =2.0, p>0.05	
Partners' education		
None	5 (71.4)	2 (28.6)
Primary	5 (71.4)	2 (28.6)
Secondary	47 (90.4)	5 (9.6)
Higher	172 (79.6)	44 (20.4)
Statistics	χ^2 =4.1, p>0.05	
Household decision-making		
No participation	30 (81.1)	7 (18.9)
Participates	192 (78.4)	53 (21.6)
Statistic	χ^2 =9.9, p<0.01	
Spousal discussion on family planning-related matters		
No discussion	78 (86.7)	12 (13.3)
Discussion	151 (78.6)	41 (21.4)
Statistic	χ^2 =2.6, p>0.05	
Household wealth index		
Lowest	9 (9.6)	85 (90.4)
Middle	81 (85.3)	14 (14.7)
Highest	63 (67.7)	30 (32.3)
Statistic	χ^2 =17.3, p>0.01	

Source: Field Work, 2019

Table 3 presents the multivariate results. In Model 1, all the included individual characteristics, namely, age at first marriage, religious affiliation, maternal education and maternal monthly income had significant effects on voluntary delayed childbearing. Women who delayed first marriage till age between 30 and 34 years were nearly three times more likely to voluntarily delay childbearing compared to women who married younger than 20 years (AOR=2.928, p<0.01; 95% CI: 2.500-3.429). Muslim women and women in traditional religions had lower odds of voluntary delayed childbearing compared to Christian women. Women who attained higher education were 44.1% more likely to voluntarily delay childbearing compared to uneducated women (AOR=1.441, p<0.01; 95% CI: 1.295-1.604). The odds of voluntary delayed childbearing were significantly higher among women who earned higher monthly incomes. For instance, women who earned more than #150,000 monthly were 75.6% more likely to voluntarily delay childbearing compared to women who earned less than #30,000 monthly (AOR=1.756, p<0.01; 95% CI: 1.572-1.962).

The inclusion of the household characteristics in Model 2 did not in any way weaken the significance of the individual characteristics. Women who delayed first marriage till ages between 30 and 34 years were 69.8% more likely to voluntarily delay childbearing compared to women who were younger than 20 years at their first marriage (AOR=1.698, p<0.01; 95% CI: 1.494-1.929). Muslim women were 36.2% less likely to voluntarily delay childbearing compared to Christian women (AOR=0.638, p<0.01; 95% CI: 0.537-0.758) while women in traditional/other religions were 46.0% less likely to delay childbearing compared to Christian women (AOR=0.540, p<0.01; 95% CI: 0.430-0.655). Women who attained higher education were more than twice more likely to voluntarily delay childbearing compared to uneducated women (AOR=2.235, p<0.01; 95% CI: 1.799-2.776). Likewise, the odds of voluntary delayed childbearing were more than twice higher among women who earned higher than #150,000 monthly (AOR=2.622, p<0.01; 95% CI: 1.850-3.714) compared to those who earned less than #30,000 monthly. Women who participated in household decisions were 22.4% more likely to voluntarily delay childbearing compared to women who did not participate in household decision-making (AOR=1.224, p<0.05; 95% CI: 1.074-1.394). Women who resided in households with highest wealth index were 25.2% more likely to voluntarily delay childbearing compared to those who resided in households with lowest wealth index (AOR=1.252, p<0.05; 95% CI: 1.073-1.461).

Table 3: Adjusted odds ratio showing effects on voluntary delayed childbearing

Characteristic predicting voluntary delayed childbearing	Model 1			Model 2		
	AOR	p-value	95% CI	AOR	p-value	95% CI
Age at first marriage						
Less than 20 years [ref]	1.000	-	-	1.000	-	-
20-24 years	0.928	0.237	0.823-1.047	0.996	0.936	0.903-1.099
25-29 years	1.040	0.694	0.856-1.262	0.971	0.627	0.863-1.093
30-34 years	2.928**	p<0.01	2.500-3.429	1.698**	p<0.01	1.494-1.929
Religious affiliation						
Christianity [ref]	1.000	-	-	1.000	-	-
Islam	0.748**	p<0.01	0.649-0.863	0.638**	p<0.01	0.537-0.758
Traditional/others	0.608**	p<0.01	0.522-0.709	0.540**	p<0.01	0.430-0.655
Maternal education						
None [ref]	1.000	-	-	1.000	-	-
Primary	0.924	0.155	0.829-1.030	0.844	0.306	0.610-1.167
Secondary	1.518	0.076	0.958-2.408	1.039	0.914	0.519-2.080
Higher	1.441**	p<0.01	1.295-1.604	2.235**	p<0.01	1.799-2.776
Maternal monthly income						
Less than #30,000 [ref]	1.000	-	-	1.000	-	-
#31,000-#50,000	0.973	0.785	0.799-1.184	0.906	0.866	0.288-2.847
#51,000-#100,000	0.873	0.129	0.733-1.040	0.939	0.638	0.726-1.217
#101,000-#150,000	1.417**	p<0.01	1.285-1.562	1.110	0.362	0.886-1.391
#151,000+	1.756**	p<0.01	1.572-1.962	2.622**	p<0.01	1.850-3.714
Household decision-making						
No participation [ref]				1.000	-	-
Participates				1.224*	p<0.05	1.074-1.394
Household wealth index						
Lowest [ref]				1.000	-	-
Middle				0.873	0.129	0.733-1.040
Highest				1.252*	p<0.05	1.073-1.461

Notes: ref (reference category), *p<0.05, **p<0.01

Discussion

This study examined individual and household factors influencing voluntary delayed childbearing among women in Osun State, Southwest, Nigeria. The study unlike most existing studies (Ogawa *et al*., 2017; Gravio *et al*., 2018; Londero *et al*., 2019; Mehari *et al*., 2020) that focused on the adverse reproductive health outcomes particularly advanced maternal age pregnancy associated with delayed childbearing paid attention to associated social determinants of voluntary delayed childbearing among women in Osun State. The study builds on a recent Nigerian study (Solanke *et al*., 2019) that investigated the individual and contextual influences on delayed childbearing by focusing more on the household factors that play key roles in the prevalence of voluntary delayed childbearing among women. Findings from the study reveal that women with improved social position and those from relatively wealthier households are more favourably disposed to delaying childbearing. This tends to provide support for the SDT (Lesthaeghe, 2010) which postulated that continued change in societal characteristics particularly improvement in female autonomy and gender equity will lead to some social features that may eventually encourage delayed childbearing among women. Many of the specified features have emerged fully in Nigeria (Ntoimo & Isiugo-Abanihe, 2013; Ntoimo, 2014) which may signpost an increasing tendency to voluntarily postpone childbearing among women. Three major findings emerge from the study.

One, the study revealed an 18.8% prevalence of voluntary delayed childbearing among women. This result was not only higher than the prevalence observed in a recent Nigerian study (Solanke *et al*., 2019) but also indicate a high level of voluntary delayed childbearing in the state which requires prompt action by health and population planning officers in the state. If the emerging trend is not quickly reversed, the prospects of population growth in the state may be adversely affected. Also, the state may have to devote more future health funds to addressing the health implications (Ogawa *et al*., 2017; Gravio *et al*., 2018; Londero *et al*., 2019; Mehari *et al*., 2020) of delayed childbearing. It is possible to use the existing blueprint for the socio-economic development of Osun State (Osun State Development Plan 2019-2028) to curb the emergence of voluntary delayed childbearing among women in the state. One way of achieving such is by developing and integrating into the Plan, a Family Health Strategy as part of the high-level strategies of the Health sector. The family health strategy should seek to provide public education on all reproductive practices (including voluntary delayed childbearing) that may adversely affect women's reproductive health during the midlife.

Two, individual characteristics such as age at first marriage, education and income have effects on late commencement of childbearing among women. The findings revealed that women who have improved education and income had higher odds of delaying childbearing. While it should be strongly emphasised that there is nothing wrong for women to seek adequate education and pursue career goals, it should be well stressed in the society that delaying childbearing to advanced age may lead to serious reproductive health for both mother and child so that young women delaying marriage and childbearing will take adequate steps to mitigate the future implications. Three, two household characteristics, namely, participation in household decision-making and household wealth have significant effects on voluntary delayed childbearing. This is consistent with earlier observations that the households in which men and women live and who they live with matters in their life courses (Speizer *et al*., 2015) and may affect their reproductive decisions (Sofolahan & Airhihenbuwa, 2012). As evident in the study, women from relatively wealthier households may have taken delaying marriage and childbearing as a convenient reproductive norm. This

practice must be discouraged in the larger interests of society.

Conclusion

The study examined the individual and household factors explaining voluntary delayed childbearing in Osun State, Southwest Nigeria. Data were collected from a cross-sectional study. Findings revealed a prevalence of 18.8% voluntary delayed childbearing in the state. Age at first marriage, religious affiliations, education, income, participation in household decision-making and household wealth index are the individual and household factors explaining the prevalence of voluntary delayed childbearing in the state. A family health strategy should be developed in the Osun state.

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