

# Awareness of female reproductive aging among undergraduate students and attitudes toward parenthood

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**Abstract:** BACKGROUND- There is a trend towards delaying parenthood as a result of drive towards career attainment which is compounded by preponderance of economic hardship in deprived settings of the developing world, even though reproductive behaviour is mainly fertility oriented in these societies. OBJECTIVE - To find out awareness of reproductive aging and attitude towards parenthood among university undergraduate students METHODS - A cross sectional survey done between year 2010 and 2011 using pre tested self administered questionnaire. Study group were students from Ahmadu Bello University, Zaria and Kaduna Polytechnic, Kaduna. The respondents were divided into two cohort; medical students (MS) and non medical students (NMS). A total of 306 questionnaires were analysed; 103 for MS cohort and 203 for NMS cohort. RESULTS - Awareness on age related fertility decline reveal that age 20 to 24years was mostly viewed as most fertile age interval by 91.3% in the MS cohort while age 25 to 29 years was viewed as the most fertile age interval by 88.2% in the NMS cohort. In the MS cohort, age 35 to 39years was seen as the age interval of marked fertility decline by 90.3% of the 103 respondents while in the NMS cohort age 40years and above was mostly viewed as age of marked fertility decline in 85.2% of the 203 respondents. All (100%) respondents from both MS and NMS cohort have the desire to be parents in future with average number of children desired being 3.8 and 4.2 in the MS and NMS cohort respectively. A rate of 93.2% in the MS cohort and 97.5% in NMS cohort viewed parenthood as extremely important. However, desired age to have first child was 25 to 29years by 85.4% of 103 respondents in MS cohort and 30 to 35years by 89.2% of 203 respondents in the NMS cohort. CONCLUSION - Awareness on female reproductive aging is undoubtedly better among MS compared to NMS. Though attitude towards parenthood is high in both cohorts, interplay of variables towards improved livelihood will determine the commencement age of parenthood.

**Keywords:** Parenthood, Female Reproductive Aging, University Students, Awareness, Attitude

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## 1. Introduction

In the developing countries, age related infertility decline warrant due recognition as one of the emerging preventable factor of infertility. The trend has shift towards postponement of childbearing as a result of career attainment and economic/social deprivation. In the developed world, the attitude of women to postpone childbearing to later age in their reproductive life is well documented (1, 2, 3, 4, 5). Increasing accessibility and use of assisted reproduction technology (ART) to overcome infertility in more than fifty percent of cases and popularising the use of newer contraception with minimal side effect are factors that contribute to delay in child bearing in the Western world. The scenario of trends in

Nigeria is typified by continuous migration of young adults from rural to urban settlements in the quest to achieve economic empowerment and career realization, even though this is a farce in most instance and a goal difficult to reach. The resultant effect of these drifts is the likelihood of parenthood postponement in an effort to attain their goals and desires.

Age related fertility decline is reported to start in the mid twenties with marked decrease in fecundability from 35years and spontaneous fertility potential almost nearing zero by age 45years (6,7). Decrease in the quantity and quality of oocytes are known to be the reasons for age-related fertility decline (8,9). If conception took place, pregnancy at advanced maternal age are associated with complications like miscarriage, chromosomal abnormalities, preterm birth, low

birth weight, hypertension, gestational diabetes, prolonged/dysfunctional labour, increase caesarean section (8,10,11,12). Age related fertility decline is also associated with decrease ART success, with only a third of those occurring between 35 to 40years resulting in ART treatment success (13,14). Thus delaying child bearing till later reproductive life, though a preventable factor could lead to infertility and increase the already high prevalent rate of infertility in most developing countries. This study sought to know the awareness of reproductive aging and attitude towards parenthood among university students.

## 2. Methodology

A cross sectional self report survey using pre-tested questionnaire carried out between year 2010 and 2011. The settings were Ahmadu Bello University, Zaria and Kaduna Polytechnic, Kaduna. The undergraduate students were divided into medical students (MS) and non medical students (NMS) offering arts and social sciences courses. The questionnaire consist of sections that assessed awareness of reproductive aging, attitude towards parenthood and factors that may influence timing of commencement of parenthood. The questions were either in multiple choice or Yes/No/I do not know. Responses were analysed and compared between the cohort of MS and NMS. Awareness on reproductive aging was assessed by analyzing responses to these questions; is age important in fertility? at what age range is a woman most fertile? at what age range does mild and marked fertility decline occurs? Does advance female age predispose to increase birth of abnormal babies and miscarriages? And if advance female age affect fecundability. Attitudes towards parenthood section had the following questions- desire to be parents, how important is parenthood, number of children desired, age to have or had first and last child. Concerning factors that may aid early parenthood, factors like career attainment, stable relationship, good income, stable employment, accommodation and child welfare incentives from the government were included

## 3. Result

A total of 306 questionnaires were analysed and 103(33.7%) were MS and 203(66.3%) belong to the cohort of NMS. The 103 MS were made up of 26(25.3%) females and 77(74.7%) males while of the 203 NMS, 81(39.9%) were females and the remaining 122(60.1%) were males. The mean ages were 24year (range of 20 to 28) and 22year (range of 18 to 31) in MS and NMS cohorts respectively. Of the 103 MS and 203 NMS, 9(8.7%) and 29(14.3%) were married in both cohort respectively. Awareness on how prevalent infertility is in Nigeria revealed correct response from 99(96.1%) of the 103 MS and 57(28.1%) of the 203 NMS.

All the respondents in the MS cohort knew that age is an important factor in fertility compared to 173(85.2%) in the NMS group. When asked which of the age range is a woman most fertile, 94(91.3%) in the MS group ticked age range

20-24 years which is correct while 179(88.2%) of the NMS said age range 25-29years. When asked at what age range does a slight decrease in woman fertility begins, 65(63.1%) in the MS cohort ticked the right answer of 30 to 34 years compared to 161(79.3%) in the NMS cohort that mainly ticked 35 to 39years. Ninety three(90.3%) of the 103 in the MS group correctly answered that age 35 to 39years is associated with marked decrease in female fertility in contrast to 173(85.2%) that thought age 40years and above is when there is marked decrease in fertility. The question on association between increase maternal age and increase rate of abnormal babies was asked, 103(100%) MS opted for the 'Yes' option which is correct while 66(32.5%) of 203 in the NMS cohort picked 'Yes' in contrast. Does fecundability (probability of conception within a single menstrual cycle) decrease with increasing female age, 101(98.1%) and 93(45.8%) in the MS and NMS cohort respectively answered correctly. Concerning increase miscarriage rate with increasing female age, correct answer was given by 99(96.1%) respondents in the MS group and 50(24.6%) in the NMS cohort (Table I).

*Table I. Awareness of Reproductive Aging*

Variables	No.	%
<b>Is age important in fertility</b>		
MS (103) Yes	103	100%
NMS (203) Yes	173	85.2%
<b>Which age range is the most fertile age range</b>		
MS (103) 20 – 24 yrs	94 (M = 68, F = 26)	90.3%
NMS (203) 25 – 29 yrs	179 (M = 109, F = 70)	88.2%
<b>At what age range does mild decrease in fertility occur</b>		
MS (103) 30 – 34 yrs	65 (M = 41, F = 24)	63.1%
NMS (203) 35 – 39 yrs	161 (M = 67, F = 55)	79.3%
<b>At what age range does marked decrease in fertility occur</b>		
MS (103) 35 – 39 yrs	93(M = 67, F = 26)	90.3%
NMS (203) ≤ 40 yrs	173 (M = 99, F = 74)	85.2%
<b>Does the rate of abnormal baby increase with advance age</b>		
MS (103) Yes	103	100%
NMS (203) Yes	66	32.5%
<b>Does ability to get pregnant within a menstrual cycle decrease with advance age</b>		
MS (103) Yes	100	98.1%
NMS (203) Yes	93	45.8%
<b>Does miscarriage increase with advance age</b>		
MS (103) Yes	99	96.1%
NMS (203) Yes	50	24.6%

Attitude towards parenthood shows that all the respondents in both MS and NMS group desire to be or are already parents. Ninety six (93.2%) out of the 103 undergraduates in the MS cohort and 198(97.5%) of the 203 in the NMS cohort view parenthood as extremely important. Mean number of children desired was 3.8 and 4.2 respectively for MS and NMS cohort. Age interval to have or had first child among MS was 25 to 29years (88/103, 85.4%) and mainly 30 to 35years in NMS (181/203, 89.2%). As for age to have last child, majority signified age 35 to 39years in both cohort (Table II).

**Table II.** Attitude towards Parenthood

Variables	No.	%
<b>Desire to be parents</b>		
MS (103) Yes	100	100%
NMS (203) Yes	203	100%
<b>How important is parenthood</b>		
MS (103) Extremely important	96	93.2%
NMS (203) Extremely important	198	97.5%
<b>Mean number of children desired</b>		
MS	3.8	
NMS	4.2	
<b>Age to have or had first child</b>		
MS (103) 25 – 29 yrs	88 (M = 77, F = 26)	85.4%
NMS (203) 30 – 35 yrs	180 (M = 102, F = 79)	89.2%
<b>Age to have or had last child</b>		
MS (103) 35 – 39 yrs	75 (M = 77, F = 26)	72.8%
NMS (203) 35 – 39 yrs	157 (M = 76, F = 81)	77.3%

Factors that positively influence early parenthood are career attainment, reliable employment, stable relationship, good income, accommodation, child welfare incentives and work with leverage of having children (Table III).

**Table III.** Factors That May Aid Early Parenthood

Variables	MS = 103	%	NMS = 203	%
Career attainment	96	93.2	201	99.0
Stable employment	78	75.7	189	93.1
Good income	86	83.5	197	97.0
Stable relationship	103	100.0	203	100.0
Accommodation	92	89.3	198	97.5
Child welfare incentive	70	68.0	182	89.7

## 4. Discussion

The importance of awareness on reproductive aging cannot be over emphasized, as it remains one of the preventable causes of infertility. In developing countries characterised by fertility oriented reproductive health behaviour and economic hardship that may delay parenthood, conscious effort on the part of the populace and dissemination of information by the health care institution is paramount to reaching a balance as to when to commence parenthood in order to prevent laying blame on ignorance for infertility that may ensue in future which could be prevented. Over all summation of this study results, reveal a better awareness level on reproductive aging and its impact on fertility among MS compared to NMS. Though attitudes of the two cohorts were favourable towards parenthood, both groups will still delay age of child bearing which have significant interpretation and extrapolation especially in the MS cohort despite high awareness level on reproductive aging and its impact on future fertility. These results goes to demonstrate the importance of educational enlightenment on level of awareness, even though reality on decisive action towards early childbearing would be determined by interplay of modifiable compounding factors that aid early parenthood as found in this survey.

In this study, awareness level on the importance of age in fertility was high even among the NMS cohort. Better result on awareness in this survey may be explained by high prevalence

rate of infertility in our setting being a developing country in sub-Saharan Africa. However, report from a similar study in Canada, showed underestimation of influence of female age on spontaneous childbearing (15). The reason for the under-estimation may not be unconnected to low infertility rate and under-estimation of frequency of infertility by 41% in the Canadian study population in one survey and as much as 55% in Europe, Australia and United States; all these figures from developed countries with low prevalence of infertility (16,17).

Attitude towards parenthood was favourable in this series, which is in concordance with report of a similar study from Sweden (18). However on the balance both cohorts from our survey would want more children compared to 2 to 3 children desired in the Swedish study. Furthermore, Swedish study population would want to have their first child earlier (28-30years) compared to 30 to 35 years mainly among non medical student cohort in this series, although majority would want to complete their family between 35 to 39years from the figures obtainable from our study and Swedish study (18). The early age at purported commencement of parenthood by undergraduates in Sweden may not be untied to low unemployment rate and better welfare services existent in such country typical of most developed countries, in contrast to high unemployment rate and virtually absent welfare service in Nigeria and most developing countries. The latter is buttressed in this study by high rate of welfare indices that could serve as an aid to early parenthood thus decreasing the impact of reproductive aging as a cause of infertility in Nigeria.

It is important to highlight that in our study, NMS more than MS, will need welfare incentives as an aid to early parenthood, this is because employment rate of doctors is extremely high and they comparatively earn better income in Nigeria. Of great interest, conspicuously all the respondent alluded to the fact that stable relationship is paramount to commencing childbearing. To proffer an explanation is to link the cultural and religious orientation in most Nigerian settings that frown at pregnancy and childbirth outside matrimony. In conclusion, encouraging early parenthood in most developing countries with prevalent high rates of infertility and low access to assisted conception technology is a preventable approach to combating infertility, but policies to cushion and ameliorate factors that may impede and militate against early age at child bearing should be the concern and focus of government.

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