



## Unintended Pregnancy among Married Antenatal Clinic Attendees in a Tertiary Institution in Nigeria

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### Authors' contributions

This work was carried out in collaboration between all authors. All authors contributed to the study concept and design. Authors EOA, AAE, JKE and JNO wrote the protocol, managed data collection, entry and analysis. Authors NCO and ECO managed the literature searches. Authors EOA, NCO and ECO wrote the first draft. All authors read and approved the final manuscript.

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### ABSTRACT

**Aims:** Unwanted and mistimed pregnancies commonly represent different life-choice considerations that affect married women of different ages. This study sought to explore the reasons for unintended pregnancies among married pregnant women in the antenatal clinic of the University of Port Harcourt Teaching Hospital, Rivers State, Nigeria, as well as the actions taken by these women.

**Study Design:** It was a descriptive cross-sectional study.

**Place and Duration of Study:** It was carried out in the Department of Obstetrics and Gynecology, University of Port Harcourt Teaching Hospital in January 2014.

**Methodology:** A 2-staged sampling method was used to recruit 385 pregnant women. A pretested semi-structured interviewer administered questionnaire was administered to all married pregnant women who attended the antenatal clinic on the different days of the week and consented to be

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part of the study. Data was entered into an excel sheet and analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0.

**Results:** Respondents were aged between 18 and 44years. Of the 385 respondents, 94 (24.4%) said the index pregnancy was unintended out of whom 89 (94.6%) was mistimed while 5 (5.4%) were unwanted. Several reasons were given for having an unintended pregnancy with child spacing being the most common. Of the 94 respondents with unintended pregnancies, 22 (23.4%) sought to terminate the pregnancy ( $P<0.05$ ) while 27 (28.7%) came for antenatal care later than they did in their last pregnancy. Sixty-seven (71.3%) either came for antenatal care in the index pregnancy at the same time they did for the previous pregnancy, or were seeking antenatal care for the first time with attempted termination (9.6%) and embarrassment about being pregnant again (5.3%) topping the list of reasons for their behavior. Thirty-two (34.0%) of the 94 respondents whose index pregnancy was unintended used one or more family planning method ( $P<0.05$ ).

**Conclusion:** This study showed that many women attending the antenatal clinic at the University of Port Harcourt Teaching Hospital have unintended pregnancies with low contraceptive usage.

*Keywords: Unintended; mistimed; unwanted; pregnancy; antenatal care.*

## 1. INTRODUCTION

An unintended pregnancy is one that is mistimed or unwanted. Forty nine percent of pregnancies are unintended at conception. It constitutes a global, social and health challenge. Evaluating unintended pregnancies can be complicated by whether it is mistimed or unwanted. Unwanted and mistimed pregnancies commonly represent different life-choice considerations that affect married women of different ages. A mistimed pregnancy (29% of pregnancies) is one that occurs if a woman did not want to become pregnant at the time the pregnancy occurred [1], but did want to become pregnant at some point in the future. While an unwanted pregnancy (19% of pregnancies) is said to have occurred, if a woman who did not want to become pregnant then or at any time in the future becomes pregnant [1,2,3].

The negative outcomes of unintended pregnancies for both mothers and children include mothers seeking late or no prenatal care, induced abortions or engaging in social vices such as exposing the fetus to cigarette smoking and substance abuse; infants with a propensity to die during their first year of life or to be abused and have insufficient resources for healthy development during childhood. It also reflects barriers to contraceptive access and use, an increased risk of physical abuse, violence and marital disharmony during pregnancy, just before delivery and often beyond [4-7]. The focus on teenage pregnancy obscures the fact that adults also have difficulty preventing and planning pregnancy, as 40% of pregnancies among married women are unintended [6,7]. Of an estimated 210 million pregnancies that occur in the world each year, 38% are unintended out of

which 22% end in abortion [8] while in Sub-Saharan Africa, unintended pregnancies account for more than a quarter of the 40 million pregnancies that occur annually [1,9], 35% in Iran [10] approximately 49% in the United States [11] and 46% in Yamagata, Japan [12].

A study on the correlates of unintended pregnancy among currently married pregnant women in Nepal identified many factors such as increasing maternal age, maternal age at marriage, perceived ideal number of children, media influence, religious beliefs and poor knowledge of family planning methods. Other factors found were birth spacing, economic constraints, desire for future education, having a career, completed family size, health issues, and men's desire [13]. The poor use of contraceptive methods and its high failure rate especially in developing regions is a remarkable cause of unintended pregnancies. Previous unintended pregnancy and husbands' disagreement with wives' desire to limit family size were shown by Belayneh et al. [4] to be significant risk factors as these women had 3.24 times to 2.76 chance of having an unintended pregnancy [14,15]. Gilda et al. [16] did a study on unwanted pregnancy and associated factors among Nigerian women and found that 51% of the respondents who reported having had an unwanted pregnancy had sought an abortion for such reasons as short birth interval, high cost of raising children, interruption of education and being unmarried.

According to the Nigerian National Demographic Health Survey of 2008, an important factor contributing to the high levels of unwanted pregnancy and abortion in Nigeria is the persistently low level of contraceptive use. The findings of Belayneh et al. [4] in their study in

Southern Ethiopia revealed that almost all the unintended pregnancies were mainly due to non-use of family planning methods or method failure (31.3%). The same study found that there was a significant association between the number of pregnancies and unintended pregnancy; women with 3-4 pregnancies were 3.16 times more likely to report having an unintended pregnancy than women with 1-2 pregnancies. With 5 or more pregnancies, it was 5.6 times more than those with 1-2 pregnancies [16].

The objective of this study was to establish the proportion of pregnancies among married pregnant women in the antenatal clinic of the University of Port Harcourt Teaching Hospital that were unintended; to determine the rate and causes of unintended pregnancy among married pregnant women and to establish the relationship between socio-demographic factors, contraceptive use and unintended pregnancies.

## 2. METHODOLOGY

### 2.1 Study Area

This study was carried out in the antenatal clinic of the Department of Obstetrics and Gynecology, University of Port Harcourt Teaching Hospital, Obio-Akpor Local Government Area, Rivers State, Nigeria. The hospital, which is located along the East-West Road, is one of the major tertiary health institutions in the Niger Delta Region, South-South geopolitical zone and is the largest in the State. It delivers services at primary, secondary and tertiary levels with specialists in the different departments and is visited by pregnant women from all social strata. It is known to cater for over 100 pregnant women per day in the antenatal clinic, running between 7am to 4pm, Monday through Friday each week. The antenatal clinic consists of two sections; the first section is the reception, which is where the pregnant women assemble to receive health talks and to be attended to by the nurses and the family planning clinic personnel. The second section is for consultation where the doctors attend to them. This work was carried out at the reception hall of the clinic.

### 2.2 Study Population

The study population consisted of married pregnant women who visited the antenatal clinic in the University of Port Harcourt Teaching Hospital for antenatal care. Only married pregnant women that had booked the index pregnancy for antenatal care in University of Port

Harcourt Teaching Hospital and were willing to participate in the study were included.

### 2.3 Study Design and Sample Size Determination

This was a descriptive cross-sectional study. A sample size of 385 married pregnant women in UPTH was used. The sample size was calculated using the formula for calculation of sample size for cross-sectional descriptive studies [17].

Sample size was calculated using the formula given thus:

$$n = (z^2 pq)/e^2$$

Where;

n = sample size  
 p = working prevalence rate  
 e = margin of sampling error tolerated for 95% of confidence  
 Adjusting for non-compliance rate of 10%  
 z = 1.96  
 p = 0.34  
 q = 1 - 0.34 = 0.66  
 e = 0.05

$$\begin{aligned} n &= ((1.96)^2 (0.34)(0.66))/0.05^2 \\ &= 0.8621/0.0025 \\ &= 344.8 \text{ (~345) married pregnant women} \end{aligned}$$

10% non-response =  $10/100 \times 345 = 34.5$  married pregnant women

Total sample size to be used  
 = Adjusted sample size  
 = calculated sample size + 10% non-response rate.  
 = 345 + 34.5  
 = 379.5 (~380) married pregnant women.

However, the total sample size used was 385 married pregnant women.

### 2.4 Sampling Method

A two-stage sampling method was used to recruit 385 respondents from the antenatal clinic. The nurses first gave pregnant women who came for antenatal care serial numbers. This number was used to ascertain the total number of pregnant women that came for antenatal care. With these assigned numbers, 30 respondents were randomly selected each day using even numbers within the assigned serial numbers. This ensured every pregnant woman had an equal chance of

being selected. Data was collected for 13 days. Thirty questionnaires were distributed daily from day 1 to day 12 (360 questionnaires) and 25 questionnaires were distributed on the last day.

## 2.5 Study Instrument

A well-designed semi-structured interviewer administered questionnaire was used. It consisted of three sections; the first was on the socio-demographic characteristics of the respondents. The other sections consisted of questions related to the respondent's reproductive history, partner's intention and contraceptive practice. Thirty-nine questionnaires were pre-tested at Aluu Primary Health Centre, Ikwerre Local Government Area, Rivers State, Nigeria in order to make possible corrections and to ensure their reliability.

## 2.6 Data Analysis

Data was entered into and analyzed using the statistical package for social sciences (SPSS) version 20.0. Descriptive, inferential statistical analyses and chi-square at 0.05 error margin was employed. Data was also summarized using graphic presentations for the interpretation of findings. Statistics was based on percentages and frequencies. P-values of less than 0.05 were considered significant.

## 2.7 Consent for Subjects

The objectives of the study were clearly explained to the respondents. Confidentiality and anonymity was ensured throughout the execution of the study, as respondents were not required to disclose personal information on the questionnaire. Respondents were informed that their participation was voluntary. Informed consent was obtained from the participants prior to administering the questionnaires.

## 2.8 Ethical Approval

Permission to carry out the study was obtained from the Ethical Review Board of the University of Port-Harcourt Teaching Hospital and from the Head of the Obstetrics and Gynaecology Department.

## 3. RESULTS

A total of 385 questionnaires were distributed among pregnant married women in the antenatal clinic of the University of Port Harcourt Teaching

Hospital. They were all appropriately filled and returned giving a response rate of 100%.

### 3.1 Socio-demographic Data

Of the total number of married pregnant women enrolled for the study, majority (145) were between 26 and 30 years; 381 (99%) of the women were Christians while 4 (1%) were Muslims, majority 173 (44.9%) were Igbo and 146 (37.9%) were nulliparous. Two hundred and ninety two (75.8%) of the women had tertiary level of education (Table 1).

### 3.2 Proportion of Unintended Pregnancies among Married Pregnant Women

Of the 385 respondents, 94 (24.4%) said the index pregnancy was unintended with 89 (94.6%) being mistimed and 5 (5.4%) unwanted (Fig. 1). Several reasons were given for their unintended pregnancy with child spacing being the commonest (Table 2).

One hundred and twenty two (31.7%) of all the respondents said they had had an unintended pregnancy before while 263 (68.3%) had never had an unintended pregnancy. When asked if their husbands wanted a child before conception, 77 (20%) of the respondents said their husbands did not. Of these, 26 (33.8%) said their husbands were not happy about the pregnancy. Concerning their husband's intention, there was a significant relationship between pregnancy intention and their husband's intention ( $P<0.05$ ). Therefore, unintended pregnancy was affected by the husband's intention. Pressure from husbands or other family members to become pregnant also had a significant relationship with unintended pregnancy ( $P<0.05$ ). Thus, extended family members affected unintended pregnancy. There was a significant relationship between respondents who had had previous unintended pregnancies and their index pregnancy intention ( $P<0.05$ ). Thus, unintended pregnancy was affected by previous unintended pregnancy (Table 3).

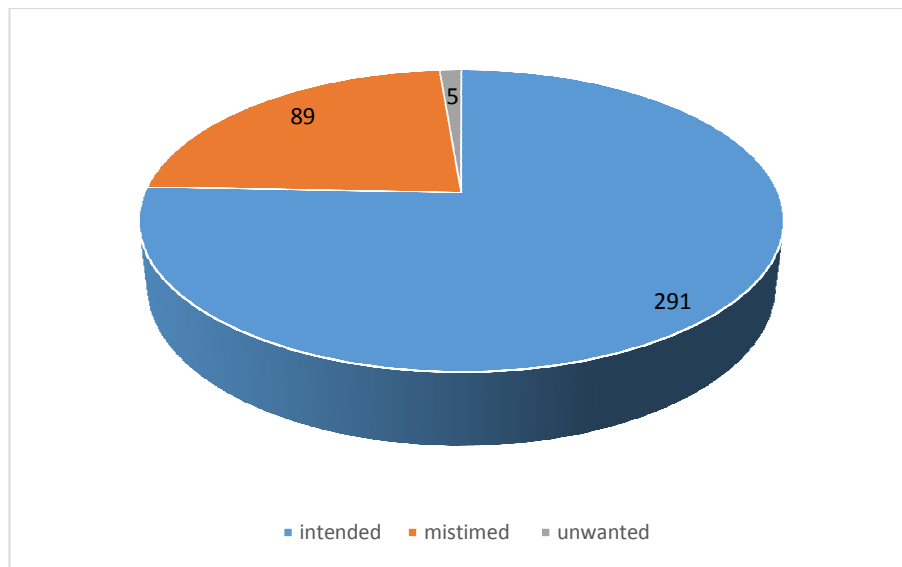
### 3.3 Actions Taken by Women with Unintended Pregnancies

Of the 94 respondents with an unintended pregnancy, 22 (23.4%) sought to terminate the pregnancy while 72 (76.6%) did not. Regarding attempts to terminate pregnancy, there was a significant relationship between respondents'

attempt at termination of pregnancy and induced abortion rate of 23.4% among unintended pregnancy. Thus, unintended respondents with an unintended pregnancy. pregnancy affected attempt at abortion with an

**Table 1. Socio-demographic characteristics of respondents**

Demographic variables	Category	Frequency (385)	Percentage (100)
Age	≤ 20years	2	0.5
	21- 25 years	50	13.0
	26-30 years	145	37.7
	31-35 years	134	34.8
	36-40 years	50	13.0
	41-43 years	4	1.0
Number of children	0	146	37.9
	1	109	28.3
	2	70	18.2
	3	41	10.6
	4	15	3.9
	5	3	0.8
	6	1	0.3
Age at marriage	≤20 years	23	6
	21-25 years	111	28.8
	26-30 years	183	47.5
	31-35 years	62	16.1
	36-40 years	6	1.6
Religion	Christian	381	99.0
	Muslim	4	1.0
Level of education	Non formal education	4	1.0
	Primary	6	1.6
	Secondary	83	21.6
	Tertiary	292	75.8
Currently working	Yes	223	57.9
	No	162	42.1
Occupation	Trader	115	29.9
	House wife	82	21.3
	Teacher	72	18.7
	Records officer, ward maid, cleaner)	29	7.5
	Civil servant	22	5.7
	Banker	15	3.9
	Professionals (Engineer, Nurse, Lawyer, Technician, Doctor)	50	12.9
	Others	0	0
Husband's level of education	No formal education	3	0.8
	Primary	6	1.6
	Secondary	71	18.4
	Tertiary	305	79.2
Husband's occupation	Engineer	108	28.1
	Trading	85	22.1
	Civil servant	32	8.3
	Teacher	26	6.8
	Technician	25	6.5
	Health worker (ward maid, cleaner, records officer)	20	5.2
	Others (Banker, Driver, Doctor, Lawyer, Nurse)	89	23.1
	Others	0	0
Place of residence	Urban	320	83.1
	Rural	65	16.9



**Fig. 1. Proportion of intended, mistimed and unwanted pregnancies among respondents**

**Table 2. Reasons for unintended pregnancy among respondents**

Reason for unintended pregnancy	Frequency (94)	Percentage (100)
Career	7	7.4
Child spacing	23	24.5
Completed family size	6	6.4
Education	16	17.0
Financial constraint	19	20.2
Health challenges	3	3.2
Work	16	17.0
Religious beliefs	4	4.3

**Table 3. Pregnancy data of respondents and their pregnancy intention**

Pregnancy data	Respondents' plan to become pregnant 385 (100%)		Test of significance	
	Unintended pregnancy 94 (24.4%)	Intended pregnancy 291 (75.6%)	X <sup>2</sup> value	P value
<b>Previous unintended pregnancy</b>				
Yes	41 (43.6)	81(27.8)	8.175	0.04
No	53(56.4%)	210 (72.2)		
<b>Husband wanted pregnancy?</b>				
Yes	47 (50)	261 (89.7)	69.955	0.00
No	47 (50)	30 (10.3)		
<b>Pressure from family members to become pregnant</b>				
Yes	13(13.8)	17(5.8)	9.547	0.000
No	81(86.2)	274(94.2)		

### 3.4 Attitude of Women with Unintended Pregnancy to Antenatal Care

Out of the 94 respondents with an unintended pregnancy, 35 were nulliparous, 24 had 1 child each, 18 had 2, 13 had 3, 3 had 4 and 1 had 5 children. Twenty-seven (28.7%) came for antenatal care later than they did in their last pregnancy. Sixty-seven (71.3%) of the respondents either came for antenatal care in the index pregnancy at the same time they did for the previous pregnancy, or were seeking antenatal care for the first time (Table 4). The reasons given for coming for antenatal care later than in the previous pregnancy are as follows: attempted termination (9.6%), embarrassed about being pregnant again (5.3%), no money to seek antenatal care as early as was done in the previous (4.2%), hospital strike (4.2%), 'did not know I was pregnant' (1.1%), was busy (1.1%) and 3.2% had no reason (Table 4).

### 3.5 Influence of Socio-demographic Factors on Unintended Pregnancy

Concerning the age of respondents, there was no significant relationship between their age and their plan to become pregnant ( $P > 0.05$ ). Thus, the intention of respondents to become pregnant was not affected by the age of the respondents. This study showed that those between 36 and 40 years (28%) had more unintended pregnancies while those between 19-20 years had no unintended pregnancies. There was a significant relationship between the number of children the respondents already had and pregnancy intention ( $P < 0.05$ ). Thus, respondents' plan to become pregnant was affected by the number of children they already had (Table 5). In relation to occupation, there was no significant relationship between

respondents' occupation and unintended pregnancy ( $P > 0.37$ ). Thus, pregnancy intention was not affected by the occupation of respondents. However, our study showed that unintended pregnancy was more among the housewives (34.1%) when compared with doctors and bankers.

### 3.6 Relationship between Contraceptive Use and Unintended Pregnancy

There was a significant relationship between respondents' use of contraceptive and unintended pregnancy ( $P < 0.05$ ). Thus, pregnancy intention was affected by the use of contraceptive. Thirty-two (34.0%) of the 94 respondents whose index pregnancy was unintended claimed they used one or more family planning method while the remaining 62 (65.0%) said they were not on any family planning method before they became pregnant (Table 6).

## 4. DISCUSSION

Unintended pregnancies are a major problem globally; however the issues are not identical for all regions.

The results of this study showed that 24.4% of the women attending the antenatal clinic of the University of Port Harcourt Teaching Hospital (UPTH) agreed that their index pregnancy was unintended. This incidence is lower than that found in comparable studies done in Nepal (41%) and other African countries such as Hosanna town, Southern Ethiopia (34%), Harare town (33.3%) and 43% in Kenya. However, in Nigeria the 2008 Demographic and Health Survey found that 11% of births were unintended [13,4,18,1,19].

**Table 4. Attitude of women with unintended pregnancy to antenatal care**

<b>Attitude to antenatal care</b>	<b>Frequency (94)</b>	<b>Percentage (100)</b>
Sought antenatal care as in previous pregnancy or for the first time	67	71.3
Sought antenatal care later than in the previous pregnancy	27	28.7
Felt embarrassed about being pregnant	5	5.3
No money to seek antenatal care as early as in the previous pregnancy	4	4.2
Wanted to terminate the pregnancy	9	9.6
Didn't know I was pregnant	2	2.1
Hospital Strike	4	4.3
No reason	3	3.2

**Table 5. Influence of number of children of respondents on unintended pregnancy**

Socio-demographics characteristics	Respondents plan to become pregnant 385 (100%)		Test of significance	
	Intended pregnancy 291 (75.6%)	Unintended pregnancy 94 (24.4%)	X <sup>2</sup> value	P value
<b>Number of children</b>				
0	126 (43.3)	20 (21.3)		
1	83 (28.5)	26 (27.7)		
2	50 (17.2)	20 (21.3)	29.734	0.000
3	24 (8.2)	17 (18.1)		
4	6 (2.1)	9 (9.5)		
5	1 (0.3)	2 (2.1)		
6	1 (0.3)	0 (0)		

**Table 6. Relationship between contraceptive use and unintended pregnancy**

Respondents' use of contraceptive	Pregnancy intention 385 (100%)	
	Unintended 94 (24.4)	Intended 291 (75.6)
<b>Used</b>	<b>32 (34)</b>	<b>82 (28.2)</b>
Traditional	9 (28.1)	26 (31.7)
Modern	20 (62.5)	53 (64.6)
Both	3 (9.4)	3 (3.6)
<b>Not used</b>	<b>62 (65.9)</b>	<b>209 (71.8)</b>

From this study, several reasons were found to be responsible for the larger proportion of unintended pregnancies with lack of child spacing being the most common reason. Like the study on correlates of unintended pregnancy among currently married pregnant women in Nepal, similar factors were also found to be strong predictors of unintended pregnancies among their respondents. Some of these reasons were; number of children already had, husband's desire for a child, pressure from extended family members to get pregnant to maintain the family lineage, knowledge and practice of family planning method [13].

About a third of our respondents admitted to having had a previous unintended pregnancy and this was almost comparable to that of Southern Ethiopia of 23.6%. Both studies found that a previous unintended pregnancy increased the chance for another. A community based study of 2,978 women aged 15-49 conducted in eight Nigerian states had 28% of the respondents report having had an unwanted pregnancy [4,16].

Among the respondents, 23.4% admitted having had the intention of terminating their pregnancy. This is comparable to the study done by Oye-

Adeniran et al. on unwanted pregnancy in South-Western Nigeria which found the prevalence of abortion was 21.7% out of the 26.6% respondents who had had an unintended pregnancy [20].

The educational level of respondents was not significantly related to unintended pregnancy ( $P>0.05$ ) in this study and this was found to be concordant with a study in Yamagata, Japan. Of the 94 women with unintended pregnancies, 76.6% had tertiary education, which correlates with a study by The Alan Guttmacher Institute (AGI) on unwanted pregnancy, which found a positive association between women with lengthier education and an increased likelihood for unintended pregnancy [12,21]. The percentage of women reporting an unintended pregnancy increased with age as 28% of the women were between 36-40 years. This finding is more likely because in our study environment, most women marry after completing tertiary education [22]. This is in contrast with the study of unintended pregnancy among currently married pregnant women in Nepal, which found that increase in the women's age at first marriage reduces the likelihood of unintended pregnancy [23].



Depending on the kind of job, being employed may increase earnings; increase the level of reproductive health knowledge an individual has and may improve social network participation that supports family planning and reduced fertility thus, lead to a reduced incidence of unintended pregnancies. This was so in this study where unintended pregnancy was higher among both unemployed women (29%) and traders (26.1%). Similar findings were noted in a Kenyan and a New Zealand study where the percentage of unintended pregnancy increased as the income level of the populations decreased [8,24,25].

We found lack of contraceptive use an important contributor to unintended pregnancy amongst respondents. Seventy per cent of the respondents did not use any form of contraceptive while 29.6% reported the use of some form of contraceptive and this correlates with the study by Oye-Adeniran where the unmet need for contraceptive was high among married women and current use rate was 23.4%. Sixty six per cent of unintended pregnancies occurred among women who did not use any form of contraceptive while 34% occurred among those using some form of contraceptive representing contraceptive failure rate. This failure rate is similar to the 31.3% of unintended pregnancies from failed contraception among pregnant married women obtained in Hosanna town by Belayneh et al but higher than a comparable study done in Harare with 11.1%. Furthermore, in the United States, contraceptive failure was responsible for about 50% of all unintended pregnancies. This could be due to choice of method, knowledge of proper use of contraceptives and adherence to instructions and then failure of the method itself [4,20,25].

This study also found that contraceptive awareness and uptake rate is still low; 26.3% of respondents who have completed their family size and 38.6% of those who still intend to have more children did not plan to use contraceptives and so are at risk of an unintended pregnancy. This can be compared with the study by Hussain et al., which showed that 32% of married women did not wish to use modern contraceptives [25].

The proportion of unintended pregnancies increased with parity in this study and this is similar to findings by Sedgh et al. and Hussain et al. As in those studies, unintended pregnancy was higher among multiparous than nulliparous women. Respondents who had 4 or 5 children

were 2.5 times more likely to have an unintended pregnancy compared with those who had 1 or 2 children. Also, similar to the study done in Hosanna town, Southern Ethiopia, this study showed a significant relationship between the number of previous pregnancies and unintended pregnancies ( $P<0.05$ ). Among those who had had 6 pregnancies, unintended pregnancy was 4.2 times commoner than among those who had had only 1 [4,13,25].

## 5. CONCLUSION

This study showed that almost a quarter of the women that attended the antenatal clinic at the University of Port Harcourt Teaching Hospital had unintended pregnancies. In addition, contraceptive usage was low. Establishment of more family planning centres, increased media campaigns on accessing family planning services and improvement of female education will help minimize the number of unintended pregnancies.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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