Knowledge, Perception and Practice of Contraception among Staff and Students in a University Community in Delta State, Nigeria

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Abstract
There is evidence to show that unplanned pregnancies are on the increase among women in Nigeria. It is true that one of the ways to improve reproductive health is by enhancing access to contraception. This study was to evaluate knowledge, perceptions and practices of contraception among 500 staff and students of a university in south-south Nigeria. A descriptive cross-sectional study was carried out in the Abraka and Oleh Campuses of Delta State University using appropriately designed, validated and pre-tested questionnaire. Data was analyzed with SPSS version 20. Respondents were students (70%), males (47.8%), aged 21-30 (48.9%) and Christians (90.9%). 84% of the respondents had good-to-excellent knowledge of contraceptives; 75.1% were sexually-active; contraceptive use prevalence was 58.2%; main reasons for non-use of contraceptive were hatred for it an intolerable side-effects. Condoms and oral pills were the preferred methods and safety, reliability and accessibility were proffered as reasons for choice; 17.3% had experienced contraceptive failure which resulted in abortion (47.4%). Pharmacy shops, health centers and Chemist shops were the sources for procuring contraceptive products; Family/friends, television and health professionals were sources of information about contraception; 46.7% did not experience side-effects; marital status was correlated with contraceptive knowledge and use. This study recommends that family planning should be vigorously promoted in a country like Nigeria with a high fertility, maternal and child mortality rates.

1 Introduction
Unplanned pregnancy has rapidly emerged as a social issue that severely deteriorates the quality of life of parents and children¹. Globally, a little over half (56%) of young married women is intentionally pregnant (so do not use contraceptives); 20% are using contraceptives and 24% are not desirous of being pregnant but still refuse to use contraceptives. Summarily, the global study reported that in both Africa and Asia, the number of young women using contraceptives was far lower than the number who are pregnant or who wish to be pregnant². There is a mention of about 179 million pregnancies annually out of which 79 million are classified as unplanned and also unwanted, a figure considered to be equivalent to the annual global population growth³.

In addition, it is on record that sexually-active adolescents (10-24 years) contract Sexually Transmitted Diseases (STD) most readily⁴. It is currently beyond contradiction that contraception has tremendous positive impact on health and quality of life. Contraceptive use can significantly avert the soaring prevalence of unplanned pregnancies and STD acquisition. The paradox today is that whilst contraceptives are relatively easier to access, costing less, in some instances with no acquisition costs, and numerous types or options being available, the incidence of unplanned pregnancies and STDs still remains high. This calls for in-depth scrutiny of the hidden factors that could account for this paradox.
The increasing population growth in Nigeria draws its root from the low contraceptive use prevalence. A national survey reported contraceptive use rate of 10%\(^2\).

There is still a need to unearth the contextual factors at the community level that inform the low contraceptive use prevalence.

This study was therefore aimed at evaluating the knowledge, perceptions and contraceptive practices among the people in a university community in south-south of Nigeria.

2 Method

2.1 Study setting

This study was carried out in Abraka campus of Delta State University (DELSU).

DELSU is a state university in Nigeria with its main campus in Abraka and other campuses in Oleh and Anwai. Currently with a student population of over 36,000, the university offers a range of programmes viz Full time Certificate, Diploma, Degree programmes, Continuing Education Programme and Weekend Degree Programmes. The university also offers Post Graduate studies. The institution is presently comprised of 11 faculties.

2.2 Study design

This was a descriptive cross-sectional study of the knowledge and contextual practice of contraception among the staff and students of DELSU.

2.3 Study population

The population of study was made up of 100 level to 600 level students belonging to various faculties of the school as well as other academic and non-academic staff. All three sites of Abraka campus and Oleh campus were used.

2.4 Sample size

A sample size of 500 was used which was determined using Fischer’s Formula

\[
N = \frac{z^2 pq}{e^2}
\]

where:

\(z\) = standard normal deviation (1.96)

\(p\) = population in the target population estimated to have a particular characteristic (in this case prevalence - 0.53)

\(q = 1.0 - p\)

\(e\) = level of precision or margin of error (0.05)

\[
N = \frac{1.96^2p(1-p)}{e^2}
\]

\[
N = \frac{1.96^2\times0.53\times0.47}{0.05^2}
\]

\(N = 383\) approximately 400

The determined sample of approximately 400 was further increased to 500 to make up for cases of attrition.

2.5 Data collection

A self designed, pre-validated questionnaire consisting of open and close ended items was used. The study questionnaire was first pre tested, and suitable modifications made.

The questionnaire was divided into two sections namely A and B. Section A requested for demographic data of the respondent viz: age, sex, identity, marital status and religion. Personal names were excluded so as to preserve the anonymity of the respondents and reaffirm the confidentiality of the study. Section B was comprised of 23 items asking questions in respect to the knowledge, attitude and practice of contraceptive use among the population.

Data was collected within a 4 week period; self-administered questionnaires were filled out by some respondents while others preferred the questions to be read out to them. In either case, privacy was provided for respondents as much as possible to minimize shyness and distraction.

2.6 Assessment of knowledge

Knowledge of contraceptive was assessed by analyzing respondents’ answers to two questions: Question 1; Have you heard of contraceptives before? And question 3; What is a contraceptive?

\[
\text{Knowledge of contraceptive} = \frac{(Q1 + Q3)}{2}
\]

Score

\(Q1: No = 1, Yes = 2\)

\(Q3: \) Enhance sexual activity = 1, Prevent sexually transmitted disease = 2, Regulate menstrual cycle = 3, Prevent pregnancy = 4

Knowledge was then ranked based on the range below

Maximum score of knowledge of contraceptive for an individual is 3

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No knowledge</td>
</tr>
<tr>
<td>0.5 – 1.0</td>
<td>Poor knowledge</td>
</tr>
<tr>
<td>1.1 – 1.5</td>
<td>Fair knowledge</td>
</tr>
</tbody>
</table>

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2.7 Assessment of practice

Practice of contraceptive use was assessed by analyzing respondents’ answers to 5 related questions.

Practice of contraceptive use (mean score) = \((Q5 + Q6 + Q7 + Q8 + Q13) / 5\)

Score

Q5: No = 1, Yes = 2
Q6: Occasionally = 1, Frequently = 2, Regularly = 3
Q7: No = 1, Yes = 2
Q8: Rarely = 1, Sometimes = 2, Most of the time = 3, All the time = 4
Q13: Never = 0, 1-6 months =1, 6-12 months = 2, 1-5 years = 3, above 5 years = 4

2.8 Data analysis

The data obtained were coded and entered into the computer software SPSS version 20. Data fed into the software were double checked to ensure accuracy. As appropriate, data were categorised and analysed using different descriptive statistics (frequency, and percentages). Results were expressed as counts and percentages.

The \( \chi^2 \) test was used for statistical analysis and \( P < 0.05 \) was considered significant at 95% confidence interval.

3 Results

The response rate was 90% (450 of 500 questionnaires).

3.1 Demographic characteristics of respondents

The socio-demographic characteristics of the respondents are shown in Table 1.

Majority of 70% of the respondents were students, and 30% were members of staff; 47.8% were males; 48.9% belonged to the 21-30 age group; 76.4% and 22.7% were not married and married, respectively. Majority of 90.9% were Christians.

3.2 Respondents’ knowledge and perception of contraceptives

About 84% of respondents had good-excellent knowledge of Contraceptives; 44.2% believed that contraceptives are essential tools for family planning; 19.6% opined that the use of contraceptives allowed women to pursue their career whilst 18.7% felt it promotes promiscuity (Table 2).

3.3 Respondents’ sexual practices and use of contraceptives

Concerning the sexual practice of the study participants, 75.1% of them ever had sex.

Out of these, 16.9% had ever practiced unprotected sex while 58.2% used contraceptives.

Reasons offered for non-use of contraceptives included personal hatred for contraceptives (22.4%), intolerable side-effects (19.7%), cost (17.1%) and partner’s hatred for it (15.8%) (Table 3).
3.4 Contraceptive methods, failures, unplanned pregnancies and cessation of use

A little over a third (31%) of the respondents used condom; 22.9% used oral pills; 7.6% used the withdrawal method; 4.2% used implants; 3.6% used post-coital pills; none of the respondents used permanent surgery or traditional methods. Major reasons for choice of contraceptive included safety (38.2%), reliability (18.7%) and accessibility (14.4%).

Regarding contraceptive failure, 17.3% of respondents had experienced failure while 45.3% had not. Respondents with unplanned pregnancy aborted (47.4%), accepted their fate and delivered the child (24.4%), had miscarriage (10.3%) or dumped the baby after delivery (5.1%).

Regarding cessation of contraceptive use, 62.4% of respondents had no intentions to discontinue contraceptive use; 10.9% were planning to stop contraceptive use (Table 4).

3.5 Sources of contraceptives, information and side-effects

The study showed that majority of 33.3% of the respondents got their contraceptive products from pharmacy shops; 21.8% from health centers; 19.6% from chemist shops; 3.1% from herbal centers; 4.2% from friends.

Sources of information on contraceptives declared by respondents were mainly family/friends (34.2%), television (28.9%), health professionals (28.8%) and internet (17.6%).

Majority of respondents (46.7%) did not experience any side-effects. For those that experienced side-effects, headache (12%), menstrual abnormalities (5.3%), itching/irritation (3.6%) and swelling (1.1%) were reported (Table 5).

3.6 Correlations

3.6.1 Practice of contraceptive use and marital status

From the correlation study, both single (r = -0.229) and married (r = 0.227) respondents practiced the use of contraceptives. However, an increase in the population of the married yields an increase in contraceptives uses while an increase in population of singles yields a lesser use of contraceptives. Both the divorced and others were not significant at alpha level < 0.001.
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Table 4: Contraceptive methods, failures, unplanned pregnancies and cessation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contraceptive methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condom</td>
<td>142</td>
<td>31</td>
</tr>
<tr>
<td>Oral Pills</td>
<td>103</td>
<td>22.9</td>
</tr>
<tr>
<td>Withdrawal of Penis Just before Ejaculation</td>
<td>34</td>
<td>7.6</td>
</tr>
<tr>
<td>Implants</td>
<td>19</td>
<td>4.2</td>
</tr>
<tr>
<td>Permanent surgery</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Post coital pills</td>
<td>16</td>
<td>3.6</td>
</tr>
<tr>
<td>Traditional/Local methods</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>Reasons for choice of contraceptive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td>172</td>
<td>38.2</td>
</tr>
<tr>
<td>Reliability</td>
<td>84</td>
<td>18.7</td>
</tr>
<tr>
<td>Accessibility</td>
<td>65</td>
<td>14.4</td>
</tr>
<tr>
<td>Cost</td>
<td>50</td>
<td>11.1</td>
</tr>
<tr>
<td>Ease of use</td>
<td>77</td>
<td>17.1</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td>Have you experienced contraceptive failure before?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>168</td>
<td>37.3</td>
</tr>
<tr>
<td>Yes</td>
<td>78</td>
<td>17.3</td>
</tr>
<tr>
<td>No</td>
<td>204</td>
<td>45.3</td>
</tr>
<tr>
<td>How did you handle the unplanned pregnancy?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abortion</td>
<td>37</td>
<td>47.4</td>
</tr>
<tr>
<td>Baby was dumped</td>
<td>4</td>
<td>5.1</td>
</tr>
<tr>
<td>Miscarriage</td>
<td>8</td>
<td>10.3</td>
</tr>
<tr>
<td>Accepted my fate</td>
<td>19</td>
<td>24.4</td>
</tr>
<tr>
<td>Others</td>
<td>10</td>
<td>12.8</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>100</td>
</tr>
<tr>
<td>Do you plan to stop contraceptive use?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>120</td>
<td>26.7</td>
</tr>
<tr>
<td>Yes</td>
<td>49</td>
<td>10.9</td>
</tr>
<tr>
<td>No</td>
<td>281</td>
<td>62.4</td>
</tr>
<tr>
<td>Total</td>
<td>450</td>
<td>100</td>
</tr>
</tbody>
</table>

3.6.2 Knowledge of contraceptive and marital status

From the correlation study also, both single (r = -0.140) and married (r = 0.132) had objective knowledge of contraceptives. However, an increase in the population of the married gives increase in knowledge of contraceptives while an increase in population of singles gives a lesser knowledge of contraceptives. Both the divorced and others were not significant at alpha level < 0.005 (Table 6).

Table 5: Sources of contraceptives, information and side-effects

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where respondents get contraceptives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health centre</td>
<td>98</td>
<td>21.8</td>
</tr>
<tr>
<td>Pharmacy shop</td>
<td>150</td>
<td>33.3</td>
</tr>
<tr>
<td>Chemist Shop</td>
<td>88</td>
<td>19.6</td>
</tr>
<tr>
<td>Herbal centre</td>
<td>14</td>
<td>3.1</td>
</tr>
<tr>
<td>Parents</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td>Friends</td>
<td>19</td>
<td>4.2</td>
</tr>
<tr>
<td>Others</td>
<td>7</td>
<td>1.6</td>
</tr>
<tr>
<td>Family/friends</td>
<td>154</td>
<td>34.2</td>
</tr>
<tr>
<td>Professional</td>
<td>128</td>
<td>28.4</td>
</tr>
<tr>
<td>Internet</td>
<td>79</td>
<td>17.6</td>
</tr>
<tr>
<td>Literature</td>
<td>61</td>
<td>13.6</td>
</tr>
<tr>
<td>Television</td>
<td>130</td>
<td>28.9</td>
</tr>
<tr>
<td>Side-Effects Experienced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td>54</td>
<td>12</td>
</tr>
<tr>
<td>Menstrual abnormalities</td>
<td>24</td>
<td>5.3</td>
</tr>
<tr>
<td>Swelling</td>
<td>5</td>
<td>1.1</td>
</tr>
<tr>
<td>Hypertension</td>
<td>16</td>
<td>3.6</td>
</tr>
<tr>
<td>Nil</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>201</td>
<td>46.7</td>
</tr>
<tr>
<td>No response</td>
<td>10</td>
<td>2.2</td>
</tr>
</tbody>
</table>

4 Discussions

4.1 Demographic data of respondents

Majority of the respondents were students. This came as no surprise because the study setting was a university community, and students were in session. This is similar to other studies6,7. The genders were almost equally represented among the respondents. This was good, so that we could have a balanced view of the contextual use of contraceptives among males and females. Most studies had biases for female respondents8,9. The reality is that there are contraceptive methods for both sexes and any focus on achieving the objectives for the use of contraceptives must consider the both genders.

About sixty-five percent of the respondents were aged between 21 and 40 years, the age period when people are considered to be highly sexually active, irrespective of marital status. Similar studies have reported preponderance of respondents in the sexually-active periods of life6,7,9,10.
Three-quarters of the respondents in this study population were found to be sexually active, similar to other studies\textsuperscript{11,12} but at variance with the 23.4% and 43% reported respectively in a study among undergraduates in Ethiopia\textsuperscript{13} and Nigeria\textsuperscript{14}.

Of particular significance was the observation that over three-quarters of the respondents were not married. Studies have shown that in many African countries, a large proportion of young people engaged in sexual practices before marriage, debutting in most cases in adolescence, before age 15\textsuperscript{15}. Therefore, understanding the contextual use of contraceptives in this population should provide substantial directives for policy development.

A large majority of respondents were Christians. This university is located in a predominantly Christian region, the Niger Delta\textsuperscript{15}.

4.2 Respondents' knowledge and perception of contraceptives

Every respondent had some degree of knowledge of contraceptives; over three-quarters of the respondents actually had excellent contraceptive knowledge. Again, the study was conducted in a university community comprising mainly students (both undergraduate and graduate), academic and non-academic staff who are deemed to be enlightened and educated. Similar levels of contraceptive knowledge and awareness have been reported\textsuperscript{6,7,16}.

Regarding perceptions concerning the contraceptive use, almost half the respondents were of the opinion that contraceptives are essential for family planning. Worthy of note is the perception being held by some respondents that contraceptives promote promiscuity but also allow women to pursue their career. A small fraction of respondents held the opinion that the use of contraceptives is a sin against God. Some opined that contraception was irrelevant. There is needed for education and counseling to emphasize and reinforce positive perceptions whilst correcting negative perceptions of contraception. There is no gainsaying the fact that contraception, which addresses population control, also has a tremendous positive impact on health and quality of life. There are contraceptive strategies that also protect against Sexually Transmitted Diseases (STDs), cervical cancer and disorders of menstruation\textsuperscript{9}.

4.3 Prevalence of contraceptive use

Perhaps, because of the negative perceptions about contraceptive use, only 58.2% of the respondents actually used contraceptives, which is incongruent with the high level of contraceptive knowledge. This is the literature trend that high contraceptive knowledge does not always result in a corresponding high contraceptive use\textsuperscript{6,17,18}.

A particular study among university undergraduates reported a very high (98%) knowledge level but 54% contraceptive use prevalence\textsuperscript{6}. A study among undergraduates in Tanzania also revealed that all respondents had good knowledge of contraception with only 58.8% of the sexually-active that ever used a contraceptive, and 41.5% were current users\textsuperscript{12}.

Some other studies among students have reported much lower levels of contraceptive knowledge and lower rates of contraceptive use\textsuperscript{6,15}.

The prevalence of contraceptive use in this study was similar to other studies\textsuperscript{7,18}. Other studies have however reported considerably lower use prevalence\textsuperscript{9,9,20}.

A national survey reported a contraceptive use rate of 10\textsuperscript{5}; a global study in Africa showed contraceptive use prevalence of 12% among married women 15-19 years and 24% among married women 20-24 years of age\textsuperscript{2}.

For people within the age group where sexual activities supposedly occur more frequently, such recurrent low prevalence of contraceptive use can only mean one thing and that is, there is a distinct possibility for unwanted or unplanned pregnancies to be

\begin{table}[h]
\centering
\caption{Correlation of Practice and Knowledge of Contraception with Marital Status}
\begin{tabular}{|l|c|c|c|c|}
\hline
 & Single & Married & Divorced & Others \\
\hline
Practice & Pearson Correlation & -0.229* & 0.227* & 0.074 & -0.040 \\
 & Significance. (2-tailed) & 0.000 & 0.000 & 0.117 & 0.396 \\
 & N & 450 & 450 & 450 & 450 \\
Knowledge & Pearson Correlation & -0.140* & 0.132* & 0.032 & 0.032 \\
 & Significance. (2-tailed) & 0.003 & 0.005 & 0.499 & 0.499 \\
 & N & 450 & 450 & 450 & 450 \\
\hline
\end{tabular}
\end{table}

*Correlation is significant at the 0.05 level (2-tailed), **. Correlation is significant at the 0.01 level (2-tailed)
prevalent. This situation is bedeviled by numerous attendant negative consequences irrespective of the outcomes of such unplanned pregnancies. This would impact negatively on the individual involved, his family and the larger society. Studies have reported that a high proportion of unmarried young women are sexually active but not using contraception resulting in over 6 million unplanned pregnancies annually, most of which end up in unsafe abortion. A high rate of unplanned pregnancies among adolescents has also been reported with nearly half of these being aborted and these are often associated with high mortality.

It has been postulated that unintended pregnancies largely contribute to the rapid population growth and impacts social and economic progress globally. Further, it is conjectured that, short of evolving a more strengthened and successful family planning programmes, should the current growth rate be sustained; the world population would rise to 13 billion by 2050, higher than the 8.9 billion projected by the United Nations. It is estimated that, of the yearly 179 million pregnancies, 79 million are neither planned nor wanted which parallel the annual population growth globally.

It would therefore appear that other extraneous factors may be involved in the decision to use or not use contraceptives. Identifying and understanding these factors would inform on appropriate evidence-based intervention strategies for improving a contraceptive use in this population.

Regarding a non-use of contraceptives, various reasons were offered, which included personal hatred for contraceptives. This reason is highly subjective and not easily amenable to further analysis; no further reasons were available for the “hatred” or “dislike”. A focus-group discussion or public enlightenment programmes may help resolve this situation. Other more objective reasons given were the intolerable side-effects and high acquisition costs. Contraceptives do have side-effects or adverse effects, which might be intolerable to some people. Notable ones are weight gain, menstrual anomalies etc. In order to avoid these intolerable adverse effects, a proper screening by a physician to ascertain the most appropriate contraceptive for the individual is highly recommended. Proper education and counseling are also indicated. For greater access to contraceptives, governments and non-governmental organizations may need to provide these products at no cost or at considerably reduced or subsidized costs to the consumers. Where the spouse’s hatred for contraceptives is the reason for non-use, an intensive counseling is required to affect a change of attitude.

The literature provides a gamut of reasons for non-use of contraceptives similar to reasons provided by the population in this study. Significant among the many reasons are socio-cultural and religious beliefs, shallow understanding concerning pregnancy and contraception, scarcity of products, aggressive attitudes of health providers toward adolescents who desire contraception services, ignorance and misinformation. A global study revealed that 56% of young married women are intentionally pregnant (so do not use contraceptives); 20% are using contraception, and 24% are not desirous of being pregnant but still refuse to use contraceptives. Summarily, the global study reported that in both Africa and Asia, the number of young women using contraceptives was far lower than the number who are pregnant or who wish to be pregnant.

For the respondents that used contraceptives, condom was the most favored followed by the oral contraceptive pills. Studies have reported a preponderant use of condoms closely followed by oral pills for contraception. The other less common strategies adopted for contraception included withdrawal of the penis before ejaculation, the use of implants and post-coital pills. None of the respondents opted for permanent surgery or traditional / local methods.

It was once opined that Intra-Uterine Devices (IUDs) and female sterilization were becoming equally acceptable as oral pills In the early 1990s, there were signals of the acceptability of female sterilization in Kenya and to lesser extents in Ghana, Liberia and Nigeria.

A study carried out among women in Kano, Nigeria in 2013 reported that Injectables were most highly favoured followed by IUD and Oral pills; whilst bilateral tubal ligation was least favoured as contraception strategy. A study among women in Zaria, Nigeria also indicated the preference for injectables.

Studies among undergraduates in Tanzania reported that condoms were favored most, followed by withdrawal and periodic abstinence. Globally, it’s been shown that women generally preferred injectables.

In this study, safety was the rationale for choice of contraceptives, followed by reliability, ease of use and accessibility. Cost occupied a distant fifth place in determining choice of contraceptive. These considerations appear very rationale; in all situations relating to medical interventions, safety is of paramount importance. For contraception, safety and reliability are of utmost priority; once these factors are guaranteed, solutions can always be found by stakeholders for accessibility and cost. Thus, even though 37.3% of respondents did not respond, 45.3% had not experienced contraceptive failures; only about one-fifth experienced contraceptive failure. The reasons for the contraceptive failures were not explored but there is a need to increase the reliability and...
success rates. The major objective for contraception is to prevent unplanned pregnancies and to avert its negative consequences.

For those that experienced contraceptive failure, the resultant unplanned pregnancies were largely aborted (about half of the cases); about one-tenth had miscarriages whilst about one-fifth delivered the babies. Unfortunately, a small fraction abandoned the babies after delivery. Any course of action taken on unplanned pregnancies, from abortion, miscarriage to dumping of babies, has deleterious effects. Even the option of full-term delivery of the babies has negative effects on the family. A detailed x-ray of the contextual use of the contraceptives is therefore, expedient; factors such as level of adherence and individualized appropriateness of contraceptive method should be evaluated.

Studies among undergraduates have revealed similar outcomes to our study. Since no contraceptive method has 100% effectiveness, it is advocated that emergency contraceptive pill be routinely added to the primary contraceptive, offering a second chance to prevent unwanted pregnancy.

Regarding intention to discontinue contraceptive use, about one-tenth of the population was planning to stop the use of contraceptives, closely similar to another study. Again, this study did not evaluate reasons for the intended or planned discontinuation of contraceptive use. The reasons given in literature ranged from religious, perceived in-effectiveness, adverse effects, preference for safe periods, outright hatred and cost; plausible reasons are plans to get pregnant and have more children, adverse reactions, cost etc.

4.4 Sources of contraceptive products and information

This study identified Pharmacy shops, Health centres and Chemist shops as the commonest sources of contraceptive products. A few users obtained the products from Herbal Centres, Friends and Parents. A study in six states across Nigeria showed that the type of contraceptive dictated the sources of procurement and that the private sector was mainly involved in the distribution and sale of contraceptives. Whilst patent medicine dealers and pharmacy shops were major suppliers of condom, IUDs and Implants were distributed by both public and private hospitals in the urban areas, and private hospitals remained the major source of Injectables; pharmacy shops and patent medicine dealers supplied oral contraceptives.

The commonest sources of information on contraception identified in this study were family/friends, professionals, television, the internet and literature. For respondents that are not in medical schools, it is apparent that they will rely on peers, family and other sources to obtain relevant information on contraception when the need arises. A recent study also reported peer group and the media as major sources of information but with least involvement of family members. A Tanzanian study identified friends, radio and school as sources of information. A study among women in Zaria, Nigeria reported mid-wives and nurses as predominant sources of information. It would appear therefore, that there is a mix-bag of product and information sources and all of these sources need to be harnessed as strategies to increase accessibility and for disseminating objective education and information to clients.

Especially for clients in this population who are largely single, there is a greater need to utilize all sources to promote the availability and use of condoms in order to take advantage of the additional benefit of protection against Sexually-Transmitted Infections (STIs) including HIV/AIDS. The mass media, health professionals and the internet are of particular essence in promoting condom use.

About half of the respondents did not experience any side-effects. For those that experienced side-effects, headache was the most prevalent followed by menstrual irregularities and itching/irritation. A similar profile of side-effects was reported in another study. The issue of side-effects is quite important, especially when recipients cannot tolerate them. This may lead to non-adherence with a resultant failure; it may also result into discontinuation of contraceptive use. Studies have shown that women with side-effect-induced cessation of contraceptive use often do not use substitutes or may actually opt for less reliable options. The resultant effect is over a million unplanned pregnancies annually.

Health professionals involved in family planning services must be knowledgeable about side-effect profiles of contraceptives and utilize appropriate communication skills to counsel their clients to forestall the negative consequences of side-effect-prompted cessation of contraceptive use. The local parlance “To be forewarned is to be forearmed” will be brought to bear in this respect for it is a lot easier to cope with an anticipated side-effect than one that manifests suddenly.

The availability of novel contraceptives with better safety and cost-effectiveness profiles is very desirable and would permit individuals to more adequately plan his/her family size. This would also forestall the advent of numerous unplanned pregnancies.

4.5 Correlations with practice and knowledge

4.5.1 Contraceptive practice

Both single and married respondents in this population practiced the use of contraceptives. There was a significant correlation between the practice of contraceptive use and marital status. Data revealed that there was a corresponding increase in contraceptive use with increasing population of married respondents. On the contrary, increasing population of single (unmarried) persons yielded lesser use of contraceptives. Both the divorced and others were not
significant at alpha level. This is in consonance with other studies\textsuperscript{12,18}.

4.5.2 Contraceptive knowledge

From the correlation study also, both single and married had objective knowledge of contraceptives. Data revealed that practice was correlated with knowledge. There was an increase in knowledge with increasing population of married while an increase in population of singles gave a lesser knowledge of contraceptives. This is in contra-distinction to a similar study\textsuperscript{18}. Other studies have, however, correlated knowledge of contraceptives with students’ attitude\textsuperscript{33} sexual attitude and behaviour of adolescents\textsuperscript{34} and contraceptive practice\textsuperscript{11}.

5 Conclusions

In this study population, consisting of about equal number of males and females and mainly unmarried, the knowledge of contraception was quite high but contraceptive use prevalence was low. Meanwhile, most of the respondents were in the sexually active segment of life in terms of their ages. To this end, about three-quarters were involved in sexual activities. For the few that used a method of contraception, the most favoured contraceptive was the condom followed by the oral pills; no respondent ever used the permanent surgical contraception strategy or local / traditional methods. Safety, reliability, ease of use and accessibility constituted the main reasons for choice of contraceptive.

For those that completely abstained from using any form of contraception, proffered reasons included hatred for contraception, the intolerable side-effects, and high cost of contraceptives. About one-fifth of contraceptive users had experienced contraceptive failure along the line and about half of the resultant unplanned pregnancies were aborted. One-tenth of contraceptive users had an intention to discontinue using contraceptives. The pharmacy shop was the major source for procuring the contraceptives followed by the health centres and patent medicine (chemist) shops. Even though family and friends did not feature significantly as sources of contraceptive products, they constituted major sources of information on contraceptives. The television, health professionals and the internet were the other major sources of information on contraception. Regarding side-effects, about half of the contraceptive users did not experience any side-effects; for the few that were faced with side-effects, headache was the predominant presentation.

Marital status was correlated with both practice of contraceptive use and knowledge of contraception.

There are a number of important benefits to the use of contraceptives accruing to individuals and the society at large. These include adequately planned families with a precise / optimal number of children at par with resources; enhanced maternal and child health, reduction in maternal death, reduced morbidity and mortality. In addition, prime use of contraceptives among the large majority of single adolescents will greatly reduce the incidence of child dumping and abrupt disruption of academic career.

This study therefore recommends that family planning should be vehemently promoted in a country like Nigeria with a high maternal and child mortality.

A constant reminder of the basis for the increasing population growth in Nigeria is the low contraceptive use prevalence. Thus, policies must be evolved and aggressively pursued to meet the unmet family planning needs of Nigerians.

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7 Conflicts of interest

None

8 Authors’ Contributions

OI: Concept, data collection, draft manuscript
OPO: Data analysis, draft manuscript
JFE: Concept; data Analysis, final manuscript

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