Author's response to reviews

Title: Are modern contraceptives acceptable to people and where do they source them from across Nigeria?

Authors:

Jane C Enemuoh (chinelo.enemuo@yahoo.com)
Obinna E Onwujekwe (onwujekwe@yahoo.co.uk)
Chinyere Mbachu (chinyere23ng@yahoo.com)
Chinwe Ogbonna (ogbonna@unfpa.org)
Benjamin SC Uzochukwu (bscuzochukwu@yahoo.com)
Agathe Lawson (alawson@unfpa.org)
Bannet Ndyanabangi (ndyabangi@unfpa.org)

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Author's response to reviews: see over
We are very grateful to the reviewers for their comments, which have help us to immensely improve the quality of the paper. Our point-by-point responses to the reviewers’ comments are:

**Reviewer 1**

1. What does the paper add to the current literature? There has been extensive literature on the acceptability, usage, and sources of contraceptives in low income countries around the world, as well as from sub-Saharan Africa. It is not clear to me what the current body of literature in Nigeria looks like and the authors should make clear if the paper adds to this literature.

   The paper provides new information on the equity issues with regards to acceptability and sources of different contraceptives from different private and public channels across a huge country such as Nigeria. This is an area of study that existing literature have not explored fully, especially with a big sample size that covers different socio-demographic contexts in the country. The information generated by this study will help design policy measures to ensure that modern contraceptives are available and equitably accessible. This explanation has been used to further justify the paper in the introduction.

2. Throughout the paper, the authors did not make clear what they meant by acceptability and how it is different from use. A definition of acceptability was particularly confusing as discussed below. What was the question on acceptability in the survey? What does the mean value of acceptability in Table 1 mean?

   Acceptability was measured using a variable that was scored. The different contraceptives were explained to the respondents before they were asked questions to measure their level of acceptability. The first question was used to determine whether any of the contraceptives was acceptable to them and the second question was used to score their level of acceptability of the different contraceptives on a score of 1 to 10, where 1 is lowest score and 10 is the highest score. This has been added to the methods section and the questions included. The two main questions were:

   A. Is use of any of the six modern contraceptives that I just described acceptable to you as a strategy for family planning? [  ] 1 = yes  0 = no.

   B. Please score your level of acceptability of different Contraceptives from 1 to 10, where 1 is lowest score and 10 is the highest score.
   a. Male Condom (MC) [  ]
   b. Female Condom (FC) [  ]
   c. Intra Uterine Contraceptive Device [  ]
   d. Implants [  ]
   e. Injectable [  ]
   f. Oral Contraceptive pill [  ]

   Minor essential revisions

1. The Introduction section seems fragmented and several paragraphs, including paragraphs 3 and 4, are redundant in my opinion.
   The introduction has been revised for better flow and the two redundant paragraphs omitted.

2. On the other hand, the authors should provide more background information and literature from Nigeria. For example, what is the current level of unmet need? What is the current contraceptive prevalence?
Nigeria has an estimated unmet need for family planning at 20% and the Nigerian National Demographic Health Survey of 2008, contraceptive prevalence rate was estimated to be 14.62% for any contraceptive method and 9.7% for modern. We have now used the information to beef up the introduction (see paragraph 2).

3. Study Methodology section:
   a. Why and how six regions were selected? Out of how many regions in the country? Related to this point, the authors should later discuss the representative of the sample and the generalizability of results.

   There are 36 states in Nigeria and a Federal capital (FCT) or Abuja, which is like a state. All the states and FCT are grouped into the six political zones and each geopolitical zone has minimum of five and a maximum of seven states. Six economically strategic states were purposively selected from each of the six geo-political zones (one state from each zone): North-central zone (FCT); North-west zone (Kano state); Southwest zone (Lagos state); Southeast zone (Enugu state); North-east zone (Adamawa state); and South-south zone (Rivers state).

   Adequate sample size was determined using a power of 80%, confidence level of 95% confidence level and utilization rate of contraceptives of 10%. This gave a minimum sample size of 350 per urban and rural site. However, in order to control for refusals and incomplete questionnaire, the number of respondents to be interviewed was increased to 385 per site, yielding 770 per state.

   These explanations have been added to the section on study methodology.

   What is the total sample of all six states? 770 per state for the six states = 4620. This has been added to the study methods under sampling.

   A few sentences were not clear. For example, “Data set comparison of urban and rural was used…”, and then later on “The ratio of each of the dependent data sets....”. Did the authors mean that they had separate data sets for urban vs. rural and for each SES group? There was one data set. The sentences have been revised to be more lucid. We have clarified it to reflect that the measure of SES inequity was the ratio of the lowest SES (Q1) and the highest SES (Q5).

   d. Particularly confusing is the sentence “To examine the inequalities in acceptability of modern contraceptive contraceptives variables, the proportion of households that noted their satisfaction sufficient to meet their unmet need or demand on different modern contraceptives was compared...” I do not understand what it means. Even if this is a definition of acceptability, the authors never presented any results in this regard: The sentence has been expunged from the paper.

Findings, Section 1: socio-demographic distribution:
   a. Did the response rate vary by state? Yes, the response rate varied by state. However, the response rate in the six states was more than 95% and a total of 4517 questionnaires were analysed. The number of analysable questionnaires ranged from 726 in Lagos state to 776 in Rivers state. This explanation has been added to the first paragraph of the results section.

   b. How about SES? It may be good to include a table to present the socio-demographic distribution. We have now included Tables 1 and 2 that show the socio-demographic distribution of the respondents as well as their SES distribution by the different states.
5. Figures 1 and 2 should be presented in %. In Figure 2, % should be calculated among contraceptive users only.

We have now deleted the two figures and have elaborated the values that they represent in the text in the results section. Figure 2 is now replaced with Table 6.

6. Also why are the % in all the tables so low and why don’t they add up to 100%? I think the authors should present the % by column instead of % for each cell.

They are low because of the denominator, which is the total sample interviewed.

7. I do not understand Table 4 at all. In addition, from Figure 2, “others” seemed to be an important source of several methods of contraception. What are “other” sources?

The other sources that were found in the study were maternity homes and Community Health Workers (CHWs). We have now added the description to the results section.

8. The Discussion section is also repetitive, for example paragraph 2 and again the second to last paragraph.

We have substantially edited the discussion for repetitions for better flow.

9. In the Discussion, the authors also had several conflicting statements about the role of the private sector. At one point, they said that it was worrisome that the private sector played such an important role. At another point, they stated that public-private sector partnership should be encouraged.

We have now streamlined the statements by changing some of the words that we originally used. We have deleted the word worrisome, since it was not really worrisome that the private sector was the major source of some of the contraceptives. Rather, it was an interesting finding that shows the need for public-private partnerships for improving the availability of the contraceptives, whilst specifically strengthening the public sector to also become a major source of all the contraceptives. These changes have been reflected in the discussion.

10. I also disagree with the statement that if contraceptives are more available and affordable from the public sector, the level of use will increase. It might only be true with implants and IUDs, while condoms and oral pills seemed to have the highest acceptability and most of them are obtained from the private sector.

We agree with the reviewer and have revised the statement to reflect our findings.

11. Several typos and grammatical errors throughout the paper.

We have copy edited the paper for typos and grammatical errors.

Discretionary revisions

1. Figures 1 and 2 were presented twice.

It has been corrected.

2. What are the additional tables 1-5 for? Why are the % also so low here?

The tables are now more explicit and present information that help to elucidate the issues of acceptability and sources of the contraceptives to respondents belonging to different socio-economic status quintiles and those that are resident in different geographic settings. The percentages are so low because few people had access to the contraceptives and also the denominator was the total sample size and not just the people that had access to the contraceptives.
Reviewer 2
Minor Essential revisions
Introduction: There are a few grammatical errors
We have copy edited the paper for typos and grammatical errors.

Study methodology
1. Which specific areas in the urban cities and rural communities where the interviews done.
We have included a sub-section on sampling and sample size where we described the selection of the specific areas where the interviews were undertaken. In each state, the state capital and the most prominent rural local government area (LGA) were purposively selected. Then, the lists of political wards in each selected state capital and LGA were used as the sampling frame that was used to randomly select eight (8) wards in each state (4 urban and 4 rural) where the interviews were undertaken. This explanation has been added to the methods section.

2. Which language was used to design the questionnaires? if english, where there any instances especially in the rural areas where the respondents did not understand the language?
The questionnaire was designed in English language. However, the interviewers were encouraged to use the local languages to explain some of the points and ask some of the questions to the respondents. This was possible since the interviewers were recruited from the respective states so as to help to eliminate language barriers. However, the fact that the questionnaire was in English language is a potential study limitation and we have included this explanation in a section on study limitation in the discussion.

3. Who administered the questionnaires?
Trained enumerators with knowledge of English and respective local languages of the states and wards where they interviewed the people administered the questionnaire. This explanation has been added to the methods section.

4 How where the states selected?
Purposive sampling technique was used to select the major state (economically) from each of the six geopolitical zones. This explanation has been added to the methods section.

5. The limitations of the study have not been clearly spelt out.
We have now included a paragraph on study limitations in the penultimate paragraph of the discussion.
Reviewer 3

1. The ABSTRACT should, however, be tinkered to make it juicy and appetizing to the reader by (1) correcting some typographical errors such as population groups rather than "populations groups", scaling up contraceptive usage rather than "scaling up contraceptives", sites in six states rather than "six states sites", etc.
   We have now copy edited the paper for the typographical and grammatical errors.

(2) stating the the numerical values in terms of percentages or numbers to support the assertions in the result section so as to make it look more like "result" rather than "conclusion".
   We have included some numerical values in the abstract.

2. In the INTRODUCTION, there were some typographical errors too e.g., "different sources at which contraceptives are accessed could simply be put as "different sources of contraceptives", "some studies suggests"- studies suggest.
   We have undertaken the changes.

3. In the METHOD, no mention was made of the period the study was conducted.
   We have now stated that the study took place from August to October 2010.

4. In the tables COCP were sometimes referred to as contrac pills or control pills.
   We have now uniformly used OCP on the tables.

5. The part of the bar chart describing the sources of IUD was not uniform with that describing the sources of the other methods. Try and make it uniform by going back to the excel chart tool.
   The bar chart has been eliminated from the paper. It has now been replaced with a table.

6. In the DISCUSSION the authors should include the strengths of the study and limitations that may pose a challenge to the generalisability of the results.
   We have now included a paragraph on the study limitations in the penultimate paragraph of the discussion.

7. Finally I would have loved to see an attachment of the questionnaire used as a tool for this study to be sure it was a competent tool for the objectives of the study.
   The questionnaire has been added as a supplementary material.

Jane C Enemuoh
Corresponding author.