Author's response to reviews

Title: Contraceptive use and associated factors in Afghanistan: A secondary analysis of Afghanistan Mortality Survey (AMS) data

Authors:

Mohammad H Rasooly (dochafez@yahoo.com)
Mohamed Ali (alim@who.int)
Nick JW Brown (nickiwbrown@gmail.com)
Bashir Noormal (dgaphi.moph@gmail.com)

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Author's response to reviews: see over
Dear Editor in Chief,

Please find enclosed our revised manuscript “Prevalence and associated factors of contraceptive utilization in Afghanistan: A Review of data from the Afghanistan Mortality Survey 2010” by Mohammad Hafiz Rasooly et al which we would like to submit for publication as a original research article in BMC’ Women Health. We have incorporated all reviewers’ comments, please see bellow all changes made point by point according to the reviewers’ comments.

All authors have approved the revised manuscript and agree with its submission to BMC’s Women Health.

Please address all correspondence to dochafez@yahoo.com. We look forward to hearing from you at your earliest convenience.

Sincerely,

Mohammad Hafiz Rasooly, MD, MSc

Correspondence author /Technical Advisor

Afghanistan National Public Health Institute

Ministry of Public Health Afghanistan
Response to reviewers’ comments

Response to Mette Brekke’s Comments

1. Are the methods appropriate and well described?
The methods are appropriate (see below under Data), but the description needs improvement:

The description of the inclusion/exclusion of EAs and the creation of the 34 sampling areas is given in a rather complicated manner, for example exclusion due to security reasons is reported first for 3 provinces and then for 34 additional sample Areas. What was the difference? (Methods, second paragraph). Please make it shorter and clearer.

The data sampling process of the AMS is described under Methods, in the section Sampling frame and sample selection”. Some matters remain unclear: First paragraph in this section: “In the second stage, 32 households were randomly selected from the updated listing for interview”. What does this mean? And further: “The sample weights calculated has taken the 34 non-respondent EAs of the South zone into account; but the excluded rural areas of the three provinces have not been taken into account because they are not represented in the survey.” I am not able to understand this.

The whole methodology section (source of data and sampling) has been revised, unnecessary explanation was removed. Since the description of the survey was already published, at the end we have referred readers to AMS 2010 final report for more detail (Line 81-132).

Second paragraph: …”head of the household (male or female). Who is head of the household? Husband’s mother? Husband? Wife?

It is clarified now in the text. “In the vast majority (96.7% cases) men, husband or father in law, were the head of households…” (Line 95).

Was female staff used when interviewing the women? Was “head of the household” present during the interview?

Now we clearly mention it in the text. “Maintaining the privacy and confidentiality during the interview were emphasized throughout the surveyors’ training and field monitoring. Efforts were made to interview women in privacy uninfluenced by their husband or mother in law” (Line 98-100)

Did you interview all women in the household (12-49y) or only married women? What was the age of the women? Somewhere you say 12-49 (Sampling frame and sample selection, 4th paragraph) and elsewhere 15–49 (Results, first paragraph).
We have clarified it within the text. Actually the AMS 2010 included all women age 12-49 years old, while for the purpose of our paper we selected only married women age 15-49 (the AMS data shows there were less married women under age 15). As stated in the text “The analyses reported here are based on information on current use of contraceptive methods provided by 25,743 currently married women (ages 15-49)”. (Lines 137-138).

The number of women interviewed also varies (47,848 in Sampling frame and sample selection, 4th paragraph) and more than 48,000 in Results, first paragraph. Please be consistent.

Thank you, this has been corrected to 47,848 (Line 110)

2. Are the data sound?
Question: How was it possible to obtain a response rate of 99%? (Sampling frame and sample selection, last paragraph). Did only 1% of the households asked to participate, decline? How and when were they asked?

We compared the response rates from similar national survey conducted in Afghanistan, like NRVA, MICS and AHS during last decades. About same responses reported by these surveys. (Line 110-113)

Question: You obviously asked women about parity (Sampling frame and sample selection, last paragraph). Why did you not include parity in the analyses regarding contraceptive use? I will suggest that you do include parity in the analyses, as it most likely is an important determinant for such use.

Thank you very much for this constructive feedback. We have included the number of living children in our both bivariate and multiple logistic regression analysis. Interestingly new significant association found (Line 169 and table 2,3).

3. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Comments:
The results section should start by saying that 25,743 currently married women (ages xx-49) provided the data analysed in this study. It should omit the description of contraceptive use in general, provided in the first paragraph.
It then provides results on level of contraceptive use by province and regions. The detailed geographic description in Table 1 will be more interesting to health government etc in Afghanistan than to an international audience.

As suggested we have started the result by suggested paragraph “The analyses reported here are based on information on current use of contraceptive methods provided by 25,743 currently married women (ages 15-49)”. Then we have presented the regional and provincial contraceptive data. (Line 137-138).
On the other hand, it would have been interesting to know the distribution of type of contraceptive methods used: in total, 22% of women used some method: what was the proportion of pill, IUD, versus the more "unsecure" methods? I suggest the authors provide this information, which they obviously have, on a national and possibly regional level.

Great suggestion, we have included the proportion of different contraceptive methods used by married women “Use of some method of family planning was estimated as 22 %. Among women using family planning, the prevalence of methods was estimated as: injectable contraceptives (6.5%), oral contraceptive pills (5.3%); LAM (3.6%); male condoms (1.7%); the intrauterine contraceptive device (1.3%); traditional methods (1.9%) and others (1.5%).” (Line 139-141)

In the presentation of the bivariate as well as in the multivariate analyses, I suggest that the authors include parity as one of the explanatory factors (see above) – they seem to have this information. They use age as a proxy for this – assuming that younger women have fewer children. It would be of interest to see the number of children that predicts the use of contraception – how many children does the women want, without spacing?

We have included the number of living children in both bivariate and multivariate analysis. Interestingly, the number of living children has strong association with the use of contraceptive methods. In the final model by including number of living children, current age and age at the first marriage were no longer remained significant variable (Line 169 and table 2, 3).

Age, urban/rural dwelling, region and education were factors related to contraceptive use in the bivariate analyses. Something is puzzling: (end of second paragraph) “….from 20% among women without education to 33% among women with primary education to 39% among women with secondary or higher education.” The total rate is 22%. Does this mean that only a very small proportion of women interviewed have some or even education? In Table 2, n should be provided for all groups of characteristics – for example Age at first marriage less than 16 (n=xx) and Primary education (n=YY).

We have added additional column indicates the number of study married women by each explanatory variables for table 2.

And in Table 2: p is given as <0.05 – but for Most remote area it is given as 0.0029. Why? It is now corrected to <0.001

Multivariate analyses:
End of first paragraph: “….first marriage between age 19 or more were 0.77 times less likely to use contraceptives than those who had the same experience 19.” What does this mean?
After re-run the multiple logistic regression, age at first marriage was no longer remained significant. So the text was removed.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
Comments:
In the first paragraph you mention “The increase in contraceptive use”. Which increase?
It is unclear how you can say (end of second paragraph):...“being from any geographical region and remoteness of household have no significant effects...”
Table 3 certainly shows that contraceptive use varies with area and urban/rural dwelling? Even when adjusted for education?
In general, the Discussion section suffers from poor language – especially the last paragraph

Yes, we have revised the text in the discussion part. The word of increased has been supported by additional data from other national surveys conducted in Afghanistan (Line 178-181). A rough comparison was presented and assessed the trend of contraceptive use. We have also stated the significant difference of contraceptive use by type of residence (urban/rural) and supported them with evidence from other countries (Line 197). The paper has been edited by a native English speaker.

6. Are limitations of the work clearly stated?
There seem to be few limitations (Discussion, last paragraph). What about limitations associated with the interview situation? See comments under 2.above.

We have added few other limitation related to the AMS data as found in the AMS final report (Line 214-217)

Other studies are only mentioned briefly in the Discussion. I am unsure if the authors have carried out a comprehensive literature search to put their findings into an international context, and suggest that you do this.

We have further enriched our discussion part with relevant evidences and added more studies from 8 articles and reports. In addition, we also supported our new findings “number of living children” with proper global information.

8. Do the title and abstract accurately convey what has been found?
The title is ok. It is reasonable to state that this is a secondary analysis in the title.

“Secondary analysis” has been included in the title.

9. Is the writing acceptable?
No. The language needs professional help. It is somewhat surprising to read that a presumed English speaking author “BN help in drafting the manuscript”- as is stated under Authors’ contribution. The poor English language on several occasions makes it difficult to grasp the exact meaning – for example in the
Introduction: ...."it curtained women access to already health services” (background, second paragraph) or ... “the scarcity of reliable national estimated on mortality…” (same paragraph) etc.
This makes the manuscript as a whole difficult to read, but it can be improved. I strongly suggest that the authors seek help by a professional editing service, like most of us non-native English speaking researchers/authors have to do.

Thank you. The paper has been edited by a native English speaker from UK. He is currently the editor of a British pediatric journal.

Further comments

Background
Third paragraph: “Only 26% of women age 15-49 attended school.” Do you mean …have ever attended school? In the Discussion section, end of second paragraph you give the rate of 12%. Please be consistent.

The figure has been corrected “Only 26 % of women age 15-49 ever attended school”(line 76).

End of third paragraph 75: “….decline in maternal and child mortality…. ” Above, you have provided actual levels of these parameters, which still seem unacceptably high – for example infant mortality of 97 per 1000 live births. If there has been a decline, you need to provide data for this.

The MMR and child mortality figures have been compared with figures from the past years and referenced properly, it shows the decline in the mortality (Line 73-76)

Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached: (See above)
• Substantial improvement of language, whereby the whole manuscript will be clearer. Done
• Corrections of the several inconsistencies mentioned above , Done
• Inclusion of parity into the analyses Done
• Inclusion of type of contraception used (secure versus insecure) Done
• Inclusion of n in Table 2. Done
• Improvement of Discussion section related to international research Done

Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)
Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct) Done

Level of interest:An article of importance in its field
Quality of written...
Response to Catherine Todd’s Comments

Major Compulsory Revisions
• There are two major issues that need to be addressed in this manuscript: data for percentage of use by method and geographic distribution by method needs to be presented. This has major policy and programming implications – for example, if withdrawal is the most commonly used method in urban areas where there are many health facilities, how will BPHS expansion reduce unintended pregnancies that result from use of less effective methods? There is no mention of bringing men into the decision process, even though two of the most common methods, condoms and withdrawal, are “used” by men and male permission is required for women to access other modern methods.

Thank you for your valuable comments. We presented the contraceptive methods at the national level (Line 139-141) . As per the data from pervious national surveys , we cannot see a remarkable increase in CPR particularly for long acting contraceptive with high CYP since 2006 (Expansion of BPHS) use of IUD, pills and condom remain stable since 2006. So we clearly mentioned it in the discussion part. Please see bellow comparison

<table>
<thead>
<tr>
<th>Survey (Year)</th>
<th>IUD</th>
<th>Injection</th>
<th>pills</th>
<th>Condom</th>
<th>Traditional</th>
<th>Total( any methods)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICS 2012</td>
<td>1.2</td>
<td>9.6</td>
<td>5.5</td>
<td>1.3</td>
<td>1.8</td>
<td>21.20%</td>
</tr>
<tr>
<td>AMS 2010</td>
<td>1.4</td>
<td>7.2</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>22%</td>
</tr>
<tr>
<td>AHS2006</td>
<td>1</td>
<td>5.4</td>
<td>8</td>
<td>2.2</td>
<td>4.2</td>
<td>20.80%</td>
</tr>
<tr>
<td>MICS 2003</td>
<td></td>
<td>2.2</td>
<td>5</td>
<td>0.6</td>
<td>1.6</td>
<td>10.15%</td>
</tr>
</tbody>
</table>

• Next, there is no mention of how contraceptive use was queried. Were women willing/able to disclose male method use? Were responses from their husbands use to confirm method choice or use? Were these interviews conducted confidentially with only the wife or husband or were women interviewed in the presence of their husband or mother-in-law? Could this have biased the data?

We revised the text as “Trained female surveyors interviewed all women 12-49 years of age within the selected households using the women’s questionnaire. Maintaining the privacy and confidentiality during the interview were emphasized throughout the surveyors’ training and field monitoring. Efforts were made to interview women in privacy uninfluenced by their husband or mother in law” (Line 97-100)

• Introduction: Multiple statistics are provided regarding maternal and child mortality for Afghanistan, but no comparator or ranking is provided to place these statistics in perspective (where do these rank globally?). Also, there are other national statistics on contraceptive prevalence gathered in Afghanistan in the last decade, such as through the National Risk and Vulnerability Assessment. Those statistics should be provided with their year of collection to provide a comparator for AMS data.
The MMR and child mortality figures have been compared with figures from the past years and referenced properly, it shows the decline in the mortality (Line 73-76) "Rates have increased since previous surveys and this trend could be attributed to factors such as the Basic Package of Health Services (BPHS) introduced in 2003 although progress has been slowed since 2006 and no increase at all in the use of the male condom from 2006-2011". (Line 178-181)

• Methods: Please specify whether there were female study staff and whether women were interviewed alone by the staff member or surrounded by family members. The conditions under which interviews were done may result in some reporting bias and need to be detailed.

We revised the text as “Trained female surveyors interviewed all women 12-49 years of age within the selected households using the women’s questionnaire. Maintaining the privacy and confidentiality during the interview were emphasized throughout the surveyors’ training and field monitoring. Efforts were made to interview women in privacy uninfluenced by their husband or mother in law” (Line 97-100)

• Methods: In the analysis section, terminology used needs to be reviewed by an epidemiologist or statistician. Contraceptive use is the primary outcome measure and should be referred to as such, rather than as a dependent variable. Was logistic regression used for the bivariate analysis? Table 2 suggests this was done by Chi-square test – please verify and, if two different methods were used, please advise why Chi-square test is used. What criteria were used in constructing multivariable models? Were all socio-demographic variables included or just those meeting certain criteria (p<0.10) in bivariate analysis?

We revised the terminology stated in the text as “The primary outcome measure was current use of any contraceptive method as reported by the married women”. We used only Chi-square test because variables are categorical (not used logistic regression in bivariate analysis). “Bivariate outcomes and exposures were assessed by Chi squared and possible confounders were addressed in a multivariate model using backward elimination The results of logistic regression analysis are given as adjusted odds ratios, 95% confidence interval and p values, to assess the relative importance of the selected variables. All analysis was conducted in STATA version 13 using taking into account the survey sample and cluster design”. (Line 128-132)

• Methods: Please clarify whether contraceptive use included all methods (modern and traditional) or just modern methods. If both groups were included, why was a sub-analysis of use of modern methods not performed? This sub-analysis should be considered as use of withdrawal and other traditional methods are unlikely to inform policy and programming development, the stated rationale for this study.

As the analysis shows the proportion of any traditional methods used by married women was low (1.9%). Therefore, we did not considered it for sub-analysis. In addition, if we
see the trend of traditional methods, except AHS 2006 (mostly reflects rural areas of Afghanistan), remain stable no remarkable change was observed.

• Results/Discussion: The reported association that contraceptive use is lower among women who marry at age 19 or older is surprising. Can some explanation be provided for this finding? After re-run the multiple logistic regression, age and age at first marriage were no longer remained significant. So the text was removed.

• Discussion: The authors state that being from “any region” and remoteness of household were not independently associated with contraceptive use. This seems unlikely based on results from the bivariate analysis. Did the authors ensure that the multivariate analysis was comprehensive by either analyzing these variables by their differential categories or creating new dichotomous variables to represent most remote vs. least remote, etc.?

Yes the remoteness was significant, but since it is highly correlated with wealth index, it is no longer a significant predicator of current use of family planning, choosing two category will exclude the ones in the middle.

• Discussion: There is not very much correlation between results and the existing literature – the paper would benefit from efforts to place findings in perspective to findings from other countries with similar challenges.

We have further enriched our discussion part with relevant evidences and added more studies from 8 articles and reports. In addition, we also supported our new findings “number of living children” with proper global information.

• Discussion: There is no limitations section while limitations were certainly present, in addition to those imposed by insecurity on sampling. Please consider what potential reporting biases may have been present at the household level. We have added few other limitations related to the AMS data as found in the AMS final report (Line 214-217). No any other limitations associated to data collection can be find in the final report of AMS.

• Tables and Figures: Is a map image missing from Figure 1? This may have occurred during .pdf conversion of the file and seems to appear as the last page of this document. Please check with journal editorial staff.

As required by the journal editor, the figure uploaded as separate file, it is not included in the main manuscript file (only the title and the legend included in the paper)
Minor Essential Revisions:
• The manuscript would benefit from review and editing by a native English speaker with a background in epidemiology. For example, the abstract currently states, "The outcome variables is use of any contraceptive methods as a binary variables" and may benefit from re-phrasing as, "The primary outcome measure is current use of any contraceptive method, a dichotomous variable."

The whole manuscript has been reviewed by a native English speaker from UK. Same has been added “The primary outcome measure is current use of any contraceptive method, a dichotomous variable, as reported by the married women”

• In the Abstract Results section, young age and rural location are indicated to be independently negatively associated with contraceptive use. Please provide the adjusted odds ratios and 95% CIs for these data.

  The text has been revised for rural accordingly (Line 50-51). Young age is no longer remain significant in the final model.

• Introduction: Review is necessary by a native English speaker to adjust grammar and vocabulary issues.
  Done

• Methods: There is quite a bit of detail regarding sampling and question content in the AMS that is not particularly relevant to the purpose of this analysis. I suggest the authors minimize the amount of detail regarding question content not relevant to family planning and management of death inquiries and instead reference the AMS report that is available on the Internet.

  The method has been revised more now is more clear and shorter. The readers are referred to AMS final report for more detail.

• Methods: Analysis: please advise how the analysis was performed. Was a statistical software package used and, if so, which one?
  “All analysis was conducted in STATA version 13 using taking into account the survey sample and cluster design.” (Line 131-132)

• Results: The data indicating an association between education and contraceptive use needs further detail, such as odds ratio or p-values to indicate whether the association was significant.

  Since this is a categorical variable, so we only add p value, AOR presented in the table 3. (Line 157-158)
• Results: There is a lot of repetition between data contained in the tables and in the text. It would be best to simply mention significant variables by name in the text and then refer the reader to the appropriate table for percentages, p-values, etc.

Done

• Results: The detail regarding analysis approach for the multivariable model should be moved to the analysis paragraph in the Methods section.

Done (Line 128-132) in method section

• Discussion: In the first paragraph, the authors mention that the national CPR of 22% is an improvement. However, no comparative statistics are provided – please include this data in the Introduction. Also, some care needs to be taken with attribution – if withdrawal and condoms are the most popular methods, is it likely that BPHS expansion has resulted in their use?

The text has been revised as

“rates have increased since previous surveys and this trend could be attributed to factors such as the Basic Package of Health Services (BPHS) introduced in 2003 although progress has been slowed since 2006 and no increase at all in the use of the male condom from 2006-2011 [7, 10, 9].”  (Line 178-181)