Reviewer’s report

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

Version: 2  Date: 17 July 2014

Reviewer: Mette Brekke

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

This is an interesting and important study, based on comprehensive data collection. It thus have some limitations in its present form. Please see my comments below:

1. Is the question posed by the authors well defined?
Yes. The aim of the study is to provide a picture on current contraceptive use among women in Afghanistan, related to country regions and to certain sociodemographic factors.

2. 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.

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

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

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).

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.

3. Are the data sound?

The data seem sound and robust. The study uses data from the Afghanistan Mortality Survey 2010 (AMS), which was primarily designed to assess mortality and causes of death, with a special focus on maternal mortality. AMS also sampled data on fertility, family planning and use of maternal and child health care services. Data were provided on regional level, and separately for 3 urban and 31 rural sampling areas. Personal interview was carried out with “head of the household” (see above) as well as with women aged 12 (or 15?) - 49. In total, 22 351 households were interviewed, and 47 848 women.

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?

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.

Data analyses were made 1) descriptive, 2) bivariate and 3) as multivariate logistic regression analyses. OK.

4. 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.

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.
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?

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).

And in Table 2: p is given as <0.05 — but for Most remote area it is given as 0.0029. Why?

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?

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

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.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
The AMS is acknowledged.
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.

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.

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 curtailed 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.

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.

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 background section, as a whole, urgently needs language upgrading. Otherwise OK.

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.
• Corrections of the several inconsistencies mentioned above
• Inclusion of parity into the analyses
• Inclusion of type of contraception used (secure versus insecure)
• Inclusion of n in Table 2.
• Improvement of Discussion section related to international research
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)

**Level of interest:** An article of importance in its field

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests