Reviewer's report

Title: Determinants of unintended pregnancies in rural Ghana

Version: 4  Date: 17 March 2014

Reviewer: Cheryl Moyer

Reviewer's report:

The authors have presented a manuscript exploring the determinants of unintended pregnancies in rural Ghana, including nearly 2000 women recruited from 4 sites. The authors should be commended on the amount of work done to collect this volume of data.

That said, this reviewer had concerns about the way the data were analyzed.

Major Essential Revisions

1) The manuscript includes 32 individual variables that were examined in bivariate analysis, with no mention of Bonferroni correction or other adjustment for conducting so many tests. p<.05 is likely not appropriately robust to determine which associations were real vs. which were by chance given so many tests.

2) Of the 32 variables tested for bivariate associations, I am willing to bet that many of them are correlated with one another. Age, parity, gravidity, single status, previous history with contraception, previous history with abortion, etc. are all likely to be correlated. It does not appear that the authors explored this potential covariance nor accounted for it in the final analysis. I suggest further analysis exploring covariation and adjusting multivariate analysis appropriately.

3) The inclusion of each type of family planning method individually likely masks a greater contribution than if they were to be lumped together as "any contraception." Or "modern" vs "traditional" contraception. However, why is it surprising that no exposure to contraception is linked to higher rates of unplanned pregnancy? This is to be expected.

4) The final multivariate model contains so many variables - many of which I posit are correlated - that it did not seem to me to be particularly informative. This is perhaps my biggest concern about this paper. I didn't feel like I learned anything new. Yes, younger women who were not married and did not know about contraception were more likely to have unintended pregnancies. Perhaps I missed a more nuanced interpretation of the value of this finding - so perhaps the authors could expand upon the implications.

5) In the conclusion, the authors say that 'women who undergo abortion can be targeted for post-abortion family planning' - yet in the previous paragraph the authors remind the reader that past experiences with abortion were actually associated with a LOWER odds of unintended pregnancies. These two concepts
conflict with one another.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.