Reviewer's report

Title: Differentials of fertility in North and South Gondar zones, Northwest Ethiopia: A comparative cross-sectional study

Version: 4 Date: 14 October 2008

Reviewer: Amy Tsui

Reviewer's report:

Thank you for the opportunity to review the revised manuscript. The authors have responded to the comments and suggestions as best they can and I appreciate their willingness to do so.

I am a bit concerned that the version the 3 reviewers downloaded appears to have been an early version, not the one intended for review. However, presumably there is no cost to the prospects of publication as a result.

My remaining concern with the manuscript is that the selection of variables into the models shown in Tables 1-3 are not theoretically- but empirically-driven. I am not yet convinced that this leads to a solid contribution of knowledge, since so much of the model specification can be affected by the correlations between variables available for measurement in the EDHS. A theoretically-grounded conceptual framework is requisite in this case. Although the authors cite the proposed design having the approval of the AAU research/publication committee, ultimately the findings of a secondary data analysis can not be anticipated or decided administratively.

For example, in Table 3, which shows the associations of surviving variables with membership in either a high or low fertility group, factors such as age at marriage, knowledge of pregnancy period, and attitudes toward future contraceptive use are often determined by other factors in the model, such as parity, child loss, marital status, and household income/expenses. Such structural endogeneity can lead to misleading estimates of the effects of the former set of factors. The same methodological issue characterizes the model of Table 2.

An alternative is to model the antecedent factors (such as education, parity, age (rather than age at marriage), i.e., those factors that are largely unchanged over the course of family formation, first and then enter a second block of factors that are more proximate to the current situation (attitudes, knowledge). This enables the reader to observe how the ORs change with the entry of the 2nd block. Still this does not relieve the analysis of the burden of causation, of trying to explain past behaviors with current status measures.

I think to proceed as the revised paper stands allows the possibility for misleading results, in which case the closing discussion must be very detailed/specific regarding the limitations of the analysis.
Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

I have no competing interests.