Reviewer's report

Title: Perceptions about sexual abstinence and knowledge of HIV/AIDS prevention among in-school adolescents in a western Nigerian city

Version: 1 Date: 19 May 2010

Reviewer: Kristen Underhill

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I have listed the most important revisions first; other revisions are then listed for each section.

Most Important Revisions

1. Methods Section, Paragraph 1 should state the eligibility criteria more clearly. For example, it should state whether there were any participants in the schools ineligible for participation. The results state that 100% of eligible youth participated, which suggests that more details are necessary about how these eligibility criteria were drawn. Were students absent from school on the survey day ineligible? The report should also state what ages of students are enrolled in secondary schools in this area.

2. Methods Section, Paragraph 2 should state how many participants were in the focus groups (average per group and total), as well as how students were selected to complete the questionnaire. How were participants selected for the focus groups? The number of groups should be justified. Were all of the focus group participants also included the survey study (and if not, why were only some selected)? What was the relationship of the researchers/moderators to the participants? More detail is necessary about how focus groups were conducted (e.g., who moderated them, what language they were in, how long they were, whether there were separate groups for males and females, what incentives were provided for taking part in the group). Was there a focus group agenda? What topics did the focus groups discuss? One set of guidelines for the kinds of information that should be reported for a focus group is here: Vermeire E et al., The critical appraisal of focus group research articles, European Journal of General Practice 2002;8(3):104-108.

3. Methods Section, Paragraph 4: The data analysis plan described in paragraph 4 needs to be expanded. Were the focus groups transcribed and coded? What approach guided the thematic analysis (e.g., were any behavioral theories used to guide the analysis?). Who analyzed focus groups? Using quantitative methods such as frequency tables to analyze qualitative data is controversial, and the manuscript should justify this approach in detail. Which qualitative variables were summarized with percentages? (Should this have referred to quantitative variables?) The use of the chi-square test to investigate associations between qualitative variables is not easy to understand -- should this have referred to quantitative variables? This paragraph needs to be revised to clarify these points.
4. The background discusses the Force Field Analysis framework, but this is not mentioned again in either the Methods (e.g., as guiding the analysis), the Results (e.g., whether results support this model), or the Discussion (e.g., whether the study can teach us anything about the use of this model for this type of research). The model should be described in detail and integrated into the rest of the study.

Abstract
5. The terms “adoption” and “the adopting” in the abstract background are unclear. If these terms refer to sexual abstinence, this must be stated explicitly. This abstract would also be more powerful if the background could provide an estimate of HIV prevalence in Nigerian youth.

6. Because there have already been a large number of cross-sectional studies assessing correlates of sexual abstinence, some of which are mentioned in the manuscript text (paragraph 5), it does not seem logical to say in the abstract that factors influencing sexual abstinence are relatively unknown. This statement might make more sense it were more specific, such as expressing uncertainty about the factors influencing sexual abstinence among youth in urban areas of Nigeria.

7. The methods section should state the number of participants in the focus group discussions, as well as the mean age of participants.

8. The sentence beginning “Females, who did not have boyfriends” in the results section was unclear. This sentence could refer to a single group of females who lacked boyfriends, did not use alcohol, and had positive attitudes toward abstinence (compared to all other females). Or it could refer to separate groups – females who lacked boyfriends (compared to those with boyfriends), females who did not use alcohol (compared to those who did), and females who have positive attitudes toward abstinence (compared to those who did not). This sentence should be phrased more clearly to reflect the analysis.

Background
9. There are some language issues and typos in the background section. The sentence beginning “Researches conduct in some countries revealed” in paragraph 5 especially needs attention.

10. The sentence stating "Individual behavior change ... has been recognized as the most effective means to prevent further HIV spread in Africa" in paragraph 3 needs a reference.

11. Later in paragraph 3, it seems necessary to acknowledge that there is some debate over the extent to which sexual abstinence played a role in the response to HIV in Uganda. See, e.g., Murphy EG, Greene ME, Mihalovic A, Olupot-Olupot P, Was the "ABC" approach (abstinence, being faithful, using condoms) responsible for Uganda's decline in HIV? PLoS Med 2006;3(9):e379. Roehr B,

12. Paragraph 4 would be stronger if it included an estimate of the average age of marriage in Nigeria; this data would help to suggest what percentage of young adults aged 15-24 might be married.

13. The reference cited to support the first sentence of paragraph 6 (reference 10, by Earl in 1995) does not appear to be about Nigeria -- it is about HIV prevention in adolescents and young adults in the US. This citation does not support either that there is inadequate evidence on the effectiveness of abstinence programs in Nigeria, or that there is limited interest in supporting abstinence programs in Nigeria. It may also be outdated for this purpose. A more appropriate citation is needed.

14. Paragraph 6 should draw a distinction between the effectiveness of abstinence (the behavior) and the effectiveness of programs designed to promote abstinence. This paragraph neglects a large body of research on the effectiveness of abstinence-based HIV prevention programs, which has indicated that abstinence-only programs are generally less effective for preventing HIV, and that although many abstinence-plus (comprehensive) programs have effectively reduced HIV risk behaviors and biological proxy measures for HIV incidence, some abstinence-plus programs also appear to be ineffective. Two Cochrane reviews exist on this topic (Underhill et al. 2007, Underhill et al. 2008), with shortened versions published in the BMJ (2007) and PLoS Medicine (2007). Other study teams have drawn similar conclusions - see, e.g., DiCenzo A et al., Interventions to reduce unintended pregnancies among adolescents, BMJ 2002;324:1426-35. Kirby D et al., The impact of sex and HIV education programs in schools and communities on sexual behaviors among young adults, Family Health International, 2006. A systematic review in developing countries found similar evidence. O’Reilly K et al., Systematic review of the impact of abstinence-only programmes on risk behavior in developing countries (1990-2005), International AIDS Conference 2006, http://www.iasociety.org/Default.aspx?pageId=11&abstractId=2198111. Given these past studies, this manuscript should support the call for abstinence promotion programs by showing an awareness of the literature and indicating how their recommendation accommodates this body of evidence. This recommendation recurs in the discussion, and in both places the manuscript should show an awareness of the complexity of the evidence base.

15. In paragraph 7, as in the abstract, it seems inappropriate to say that there is a dearth of evidence on factors influencing the adoption of abstinence, when paragraphs 5 and 6 have just cited a large number of studies that provide this evidence. This paragraph should state more specifically the type of evidence that is still needed (e.g., evidence about southwestern Nigerian youth).

16. In paragraph 8, much more detail about the force field analysis framework is needed -- many readers will likely be unfamiliar with this model.
17. The background should end with a paragraph stating what the aims of the study were. The study question is not clearly presented, and adding a final paragraph stating the study goals would solve that problem.

Methods
18. Paragraph 5 should state more clearly how these percentiles were computed -- were they calculated on the basis of the scores of the participants in this study? It is unclear why the "average" score was not centered around the 50th percentile, but instead was centered midway between the 50th and 75th percentile. A statement of whether the scale was validated and/or piloted would also be helpful.

Results
19. In paragraph 1, it is unusual to see a refusal rate of 0%. If students who did not have parental consent were screened out beforehand, it would help to clarify what percentage of parents refused to allow their children to participate.

20. In paragraph 2, it needs to be clear which participants are represented in the demographic characteristics – is this just the participants who took the survey, or are the FGD participants included here too? It may be better to present the demographic data for the focus group participants separately.

21. In paragraph 2, there is a typo -- the percentage of fathers who completed post secondary school education was 57.4% according to the tables. If this is not a typo, the mothers and fathers' educational backgrounds are dissimilar.

22. Paragraph 4 should clarify that the percentages refer to the percentages of participants who knew about the HIV prevention behavior, not the percentages of participants who actually reported engaging in that behavior. The list is mixed up and not in descending order by percentage.

23. Paragraph 5 is difficult to interpret. If the percentiles are set based on this sample, how is it possible that only 22.6% scored above the 75th percentile? A full 25% of participants should score above the 75th percentile. Similarly, 25% of participants should score between the 50th and 75th percentiles -- but 34.3% did so. The manuscript should clarify in the Methods section where these percentiles came from.

24. Paragraph 8 should actually give the 95% confidence intervals, not just say CI=95% without providing the interval.

25. The focus group data are given very little space in the results, and in the section “Perceived factors promoting the adoption of abstinence” it is unclear which findings are from focus groups and which are from the survey. No data are presented from female focus group participants. The section on “Respondents’ suggestions for promoting abstinence” also seemed underdeveloped. The focus group data should be reported in more detail, with specific reference to themes arising from the results and analysis.
Discussion

26. The background (paragraph 4) cites a previous study finding abstinence among 47% of females and 27% of males. The sample in the present study had much higher rates of abstinence, and the discussion should comment on this discrepancy, suggesting possible reasons for the difference.

27. In the section entitled “Implication for health education,” the text should again acknowledge the evidence for the effectiveness of abstinence-based programs, and note how their recommendation addresses this evidence.

Limitations

28. This section could be improved by acknowledging evidence for the validity and reliability of self-reported sexual behaviors among adolescents. For example, see Brener et al., Factors affecting the validity of self-reported health-risk behavior among adolescents, J Adolesc Health 2003;33:436-57, http://198.246.98.21/HealthyYouth/yrbs/pdf/validity.pdf.

29. This section could also discuss the general limitations of cross-sectional studies compared to other study designs for assessing predictors of abstinence (e.g., prospective cohort studies).

References

30. The references are inconsistently formatted – some appear to be in APA style, others in AMA style. These should be consistent.

Table 2

31. Because this is a cross-sectional study, it is misleading to use the word “effects” in the title of this table. These are tests of association, not effect.

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.