Reviewer’s report

Title: Self-medication with Antibiotics for the Treatment of Menstrual Symptoms in Southwest Nigeria: A Cross-sectional Study

Version: 3 Date: 26 July 2010

Reviewer: Abdelmoneim Awad

Reviewer’s report:

General Comments

The paper is now much improved, and most of my remarks have been adequately addressed. However, I still have major concerns particularly related to the methods that should be addressed.

Major Compulsory Revisions

I offer the following comments:

1. The authors did not indicate how were these 4 universities selected out of the 34 universities in Southwest Nigeria? Convenience sampling or random, if random, how?

2. The authors described how the sample size was calculated, but still I have the following concerns: a] The equation being used to allow an estimation of the prevalence and not to determine the difference in population for between different groups at 5% significance level. If, yes could they indicate the power of the study to detect this difference. b] I found it difficult to understand the way they follow in increasing the sample size by doubling it due to the clustered nature of sampling approach, increased by 5% to adjust for non-responses to reach 679. 680 can be divided by 4, so why 700 is chosen and then increased by 40 despite the fact that they have already considered the non-response previously. A reference must be included as an evidence for the validity of this.

3. How were the numbers of students to be included in the study from each university calculated? I can see from table 1 that universities with less number of students as being mentioned in the methods represent 42.8% of the study population, which indicate that multi-stage cluster sample was not implemented appropriately in this study. The authors stated in the sample size calculation that the number was rounded up to a number to be divided by 4 (the number of universities) if this is the case, validity and generalisability of this study would be greatly affected. How can you ensure appropriate randomization through selection of the same number of students from a university with 25,000 students and another with 6,000 students.

4. The use of two methods of sampling for recruitment of study participants is also another limitation of this study.
5. I read the survey instrument carefully and I noticed that there are no direct, clear questions about the use of antibiotics without consultation of a medical doctor? Could the authors explain why they did not include the following two direct questions: (i) In the past 3 months, have you taken any antibiotic to treat menses symptoms without medical (doctor) consultation? (ii) In the past 3 months, have you taken any pain relieving medications such as aspirin or ibuprofen to relieve menses symptoms without medical (doctor) consultation?. The non-inclusion of these questions will make it hard to estimate accurately the prevalence of self-medication. The author stated that they used questions 11, 12 and 13 to estimate the prevalence of self-medication with antibiotics. Since there was no question to indicate the frequency of use (i.e., 1st or 2nd or 3rd time...etc to use the antibiotic), in addition to the fact that 21% reported that they had seen a doctor, there is high possibility that most of the 24% that were estimated to be self-medicated were prescribed the antibiotic by a medical doctor. However, the response to the question that only 6% reported that it was recommended by a doctor or nurse may indicate the possibility that those who were self-medicated is about 18%. The authors needs to explain in details with percentages how the three questions were used to calculate the prevalence of self-medication with antibiotics for review process.

6. The authors described how the study questionnaire was piloted. The validity and reliability measures of this instrument should be included in the manuscript.

7. In table (2), the results of the multivariate logistic regression for age, public/private universities and marital status should be included even if there are no significant differences. The numbers of each subcategory should be indicated (i.e yes (n=), No (n=), Lab science, public health or medicine n=,...etc). Since the responses for cramps and other symptoms include 5-point scale, the combining of mild, moderate, severe and extreme would not be appropriate to include for multivariate analysis. I would suggest to be deleted, if the authors would like to include, hence I would suggest 3 groups (none, mild+ moderate, and severe + Extreme).

8. Figures 1 A and B to be deleted since they will not add much significance to what have been already included in the text and tables.

9. Could the authors explain how do they reach the conclusion that this study reported that 1 out of 4 university women surveyed in Southwest Nigeria self-medicate with antibiotics. I would suggest to be deleted.

Minor Essential Revisions

10. I would suggest the following changes to the results section of the abstract:

The response rate is 95.4%. Eighty-six percent (95% CI: 83-88%) of participants experienced menstrual symptoms, and 39% (95% CI: 36-43%) reported using analgesics to treat them. Overall, 24% (95% CI: 21-27%) of participants reported
self-medicated use of antibiotics to treat the menstrual symptoms: Factors associated with this usage were: lower levels of education (Odds Ratio (OR): 2.8, 95% CI: 1.1-7.1, p-value: 0.03); non-science major (OR: 1.58, 95% CI: 1.03-2.50, p-value: 0.04); usage of analgesics (OR: 3.17, 95% CI: 2.07-4.86, 52 p-value: <0.0001); and mild to extreme heavy bleeding (OR: 1.64, 95% CI: 1.01-2.67, p-value: 0.05) and acne (OR: 1.57, 95% CI: 0.98-2.54, p-value: 0.06). Ampicillin, tetracycline, ciprofloxacin and metronidazole were used to treat the most symptoms. Doctors or nurses (6%, 95% CI: 4-7%), friends (6%, 95% CI: 4-7%) and family members (7%, 95% CI: 5-8%) were most likely to recommend the use of antibiotics for menstrual symptoms, while these drugs were most often obtained from local chemists or pharmacists (10.2%, 95% CI: 8-12%).

11. P-values < 0.0001 to be changed to < 0.001, which also indicate the high significance.

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.