Reviewer's report

Title: Self-medication with Antibiotics for Menstrual Symptoms Among University Women in Southwest Nigeria: A Cross-sectional Study

Version: 1 Date: 15 June 2010

Reviewer: Abdelmoneim Awad

Reviewer's report:

General Comments

- This paper describes a cross-sectional study exploring the prevalence of self-medication with antibiotics for the treatment of menstrual symptoms among university students and to identify factors associated with this practice. The aim of the study is interesting but I do have significant concerns about the research methodology and the sampling method used. Moreover, the paper lacks appropriate presentation of the results and discussion of key findings. There are major concerns that should be addressed. I offer the following comments which I hope will improve the manuscript.

Major Compulsory Revisions

Title: I would suggest to be changed to “Self-medication with antibiotics for the treatment of menstrual symptoms in Southwest Nigeria”

Abstract

- The methods are not adequately described in relation to sampling (convenience or random), data collection (self-administered or structured face-to-face interview). The last sentence to be changed to “Descriptive and logistic regression analysis were used in data analysis.”

- Results: The findings need to be presented more clearly with exact percentages, precision of measures (95% confidence intervals), odds ratio (95% CI) and p-values.

- Conclusions: This section needs to be revised to highlight major findings of the study and focus on need for further investigation of impact of self-medication on student health, etc.

Introduction

- It is written with information that is relevant to the study. There should be a short paragraph in the introduction on why the certain background factors were studied. It is preferred to include the following reference: A. O. Afolabi. Factors influencing the patterns of self-medication in an adult Nigerian population. Annals of African Medicine Vol. 7, No.3; 2008:120 – 127
Methods

-In order to help readers understand the context of the study it would be helpful if the authors provide some additional background information on the subject pool. Number of universities in Nigeria and Southwest Nigeria. Percentages of Nigerians go to university. Socioeconomic status of these students compared to the rest of Nigeria.

-Why was n = 706 chosen? Was a sample size calculation done, or was this simply chosen as a round number? The authors did not show any justification for the inclusion of this sample size. The effects of confounders, as opposed to chance effects, are not reduced with increasing the sample size ( Bennan P, Croft P. Interpreting the results of observational research: chance is not such a fine thing. BMJ,309:727-30, 1994). The authors need to indicate how the sample size was calculated, and the power used to determine the difference in population for between different groups at 5% significance level.

- The authors did not indicate how the universities and the schools were selected? Are these the only universities in Southwest Nigeria? The authors stated that the study participants were recruited from residence halls and from lecture halls, this a classic example of a convenience sampling. Hence, the sample could be biased and not a truly random sample. This is a major limitation that undermines the validity of this study. The findings of such a type of study should be based on data obtained using a multi-stage cluster sample. The use of multi-stage cluster sampling is the most appropriate for studies of this nature. Moreover, the authors did not show how they accounted for selection and information biases.

- It seems bizarre, and most unlikely, that all 706 students approached agreed to participate. I find it hard to believe that the response rate was 100%. This needs to be clarified. The authors should mention whether or not an incentive was offered for completion of the questionnaire. If there is any information about those who elected to not complete the questionnaire that should be mentioned as well (age, public/private university). Were non self-medicators asked why they didn’t self-medicate?

-Study Questionnaire

-Please provide a copy of the survey questions for peer review and for inclusion as an Appendix in the event of publication.

-Has a pilot study been conducted? If yes, the number of students in whom the questionnaire was pre-tested should be indicated. Also it whether there were any modifications in the questionnaire after the pilot study or not should be indicated. If any, what was the extent of the modifications?

-A clearer definition of what self-medication means in the context of local understanding in Nigeria would be helpful, and how was it defined to the study participants.
Could the authors explain why they did not include questions about inappropriate use of antibiotics (i.e. incorrect dosing, duration)? Did the authors evaluate financial status of students? If so, should include that valuable information, and could help in discussing the results of comparison between public and private universities that should be conducted.

Description of the data collection should be included before the data analysis section.

The authors performed simple descriptive analysis that does not allow the calculations of the precision of their estimates (i.e., 95% confidence intervals). A better approach for data analysis and interpretation of the present results should involve calculations of the precision. The authors performed a multivariate logistic regression analysis that would strengthen the study by providing a more thorough explanation of the relationships between predictive variables, however, no information is provided about the categories of the predictive variable used. Table (1) shows 7 groups of age; 7 groups of level of education; 5 areas of concentration; 7 groups of year of study. The authors need to show how do they classify these groups in the multivariate regression analysis. It is preferred to classify your data of each predictive variable to 2 or 3 groups after that you can compare between the groups to predict factors associated with self-medication. The groups should be defined in the data analysis section.

This sentence “Continuous data are presented as mean # 95% CI” should be included in the data analysis section

Results

In general, the presentation of the results is poor. A better approach for presentation of the results is needed.

The results should be indicated in the text with numbers, prevalence (%) (95% confidence intervals). The differences in responses according to predictive variables should be presented in the tables and expressed as odds ratio (95% confidence interval) and p-value.

The authors should make sure that results (i.e. numbers, percentages) are reported in a consistent method.

Table (1) The first three levels of education should be defined at the legend of the table. I would suggest its presentation with 2 or 3 groups for each predictive variable. 95% CI should also be included. The numbers and percentages need to be recalculated, since the total for some the variables is not 706 (100%) for e.g., the level of education (697; 95.9%), area of concentration (671; 95%), age (705; 97.1%), marital status (683, 96.8%). An explanation should be provided for these discrepancies.

Table (2) needs to be replaced with a table showing the percentages (95% CI) of use of the different antibiotics in the treatment of menstrual symptoms.
- Figures 1 (A) and (B) to be replaced with tables showing the results of the multivariate regression analysis with odds ratio (95% CI) and p-values.

- Figure 2 to be deleted and the information should be provided in the text with percentages (95% CI).

Discussion

- It should be written considering the aforementioned suggested changes in the results and discussing key findings. It should be strengthened to highlight what is most important, and what is the value added by the present study compared to the previous published reports from developed and developing countries.

- The acknowledgement of the weak study design and the recommendation that a further trial with a more robust design to be undertaken should be discussed.

Minor Essential Revisions

The manuscript contains grammatical errors and the quality of the written English needs attention.

**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, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests