Review of: "A Systematic Review of Antibiotic Use in Humans in Nigeria and Its Potential Contribution to Rising Antimicrobial Resistance"

Olivia Chan[1]

1 Columbia University

Potential competing interests: No potential competing interests to declare.

Review of

A Systematic Review of Antibiotic Use in Humans in Nigeria and Its Potential Contribution to Rising Antimicrobial Resistance

This is an important topic in AMR. A Systematic Review (SR) to gather factors that influence antibiotic use in Nigeria will help understand the baseline and background. Please find comments here referred to by sections from the manuscript.

Title

The title speaks to and highlights the antibiotic use pattern investigation in humans in Nigeria.

Objective and findings alignment

Authors set out to conduct a systematic review of antibiotic use in humans in Nigeria. They included a search of articles published in English between 2000 and 2017. Their findings include that the median prevalence of persons using antibiotics without prescription is 46.7%. Their descriptors include drivers of irrational antibiotic use. The drivers were described as poor regulation of medicines and premises, a chaotic medicine distribution system, limited licensed medicine prescribers, over-the-counter (OTC) sales of antibiotics, patients' demand for antibiotics, and access to health insurance.

The findings aligned with the objective of the systematic review described in the manuscript.

Introduction

- Clear and well-written

Method and Material

The data search was conducted between January 2000 and January 2017. Data was clearly defined (using Medline via PubMed and African Journals Online (AJOL) databases). Search keywords were clearly defined. Three researchers searched the articles as a verification of a complete search. "Any inconsistencies were discussed and finalised by the team members" is a good practice in SR. The authors indicate the data was analysed as frequencies and proportions,

while free-text responses were synthesised.

Two areas of improvement:

- Please indicate who reviewed full text in "…Titles and abstracts of compiled studies were thereafter screened and followed by a full-text review…". How were the reviews done? Is there a line-by-line reading and development of themes? Please indicate.
- Please indicate if there is a template or framework to extract drivers. That is, the method authors chose as they went through the content analysis. How did they ensure the reading of articles was consistent across readers and systematic throughout the content of the articles they reviewed? For instance, are the drivers included as they are mentioned in the articles being reviewed? Or if there is a theme or themes being developed?

Results

There is qualitative writing and quantitative description in the findings section. There are descriptions of themes in the writing.

There are a few gaps that need clarification and description. It is recommended for authors to consider these points and work them into the body of the writing. The following recommendations are based on how most antibiotic use systematic reviews are conducted and what findings are depicted in publications. There are main systematic review reporting guidelines from "PRISMA." There is a Cochrane protocol for systematic reviews. As a summary of those and an application to this article, these are recommendations for authors to include in the findings:

- There are 11 articles included in this review. There are 10 articles included in Figure 3. Please kindly see if you can amend the discrepancy. If the 11^{th} article does not include a percentage, please state this observation in your narrative.
- Authors mentioned 90% of studies are of cross-sectional design. What is the other 10% study design? Please describe.
- Are these surveys, interviews, or mixed-method studies? Please describe.
- Who are the participants in these studies, physicians, para-medical workers, medical officers, nurses? Please describe.
- If authors can include a total number of participants that can be calculated and summed up from the articles, it helps readers understand the scope of these included studies.
- Authors mentioned three studies reported the use of antibiotics without a prescription. Does it mean the other studies mentioned the use of antibiotics with a prescription? Please clarify and build it into the paragraphs.
- Please kindly describe in the first paragraph whether all articles are antibiotic-specific studies. Some surveys appear to be asking officers' perception of the prescription of antibiotics in general, not a particular kind of antibiotics. These are "knowledge, attitude, perception" studies. Please clarify and include findings in the body of findings.

Diagrams and Figures

It is my personal opinion that Figure 1 is irrelevant to the manuscript's topic. A figure or flow chart of inclusion and exclusion in Figure 2 is sufficient. I recommend not including Figure 1.

- Typo change recommended: In Figure 3, the percentages are indicated partially as “31,1,” which appears to be 31.1? Please kindly amend the typo.

Discussion

- Authors discussed One Health in paragraph two after discussion of penicillin use. “…As such, a One Health approach to AMR surveillance is necessary to break the chain of transmission in the tripartite sectors, and quantifying the antibiotics sold for use in animals is a critical step in defining a strategy for AMR prevention in humans and animals”. While I agree One Health in AMR is a significant topic, the genetic selection pressure is a different topic without evidence it was identified in the SR. This is a diversion to a different topic and has no citation or mentioning in the body of study. If the survey participants are farmers, have access to close contact with animals, or have evidence that animal antibiotic use in the articles included in this SR, please state it in the body of writing and also include it in the discussion.
- Can you provide specific examples of how the studies reviewed address the drivers of irrational antibiotic use?
- The authors discussed the lack of health insurance. It would be good to include part of health insurance is access to essential medicine if health insurance meant the coverage of medicine.