Reviewer’s report

Title: Self-medication with over the counter drugs, prevalence of risky practice and its associated factors in pharmacy outlets of Asmara, Eritrea

Version: 0 Date: 20 Jul 2018

Reviewer: Afonso Miguel Neves Cavaco

Reviewer's report:

Thank you for the opportunity to read about this important topic. My comments are as follows.

General comments.

The study was well design and well reported. I'm not sure if a true statistical representation was achieved, contrary to what might be expected from the title and the abstract (detailed comment below), as well as clearly defended in the study strengths. Nevertheless, I'm more concerned with the data collection questionnaire, since no additional information is provided to secure the reader on its validity and/or reliability. For instance, was the knowledge on OTCs assessed only based on the items mentioned e.g. conservation and expiry date? I would see as more reliable to conduct an interview with members of the public who had just acquired an OTC and asking for knowledge concerning that drug e.g. main indication, recommended dose, duration, etc. This would help also to better gauge the expected consumption for a drug and its safety profile, thus establishing a more precise and reliable risk. Additionally, the questionnaire data might be biased by social desirability and recall bias i.e. the participants reported behavior, not necessary the actual one. Thus, I would use along the text a conditional writing style. For instance, the percentage of those who reported/assumed/disclosed reading the leaflet, not those who (actually) read leaflets. This issue should be better addressed at study limitations.

Knowing the study participants were recruited at pharmacy outlets and that OTCs are only dispensed in pharmacies, I was expecting further discussion regarding the role of pharmacists in self-medication, especially when authors conclude OTC consumption to be of concern. In Conclusions nothing is mentioned on potential role of those responsible for this public health issue.

In Discussion, I was also expecting to see gender addressed as non-significant predictor.
Specific comments

Line 69. I would add "medical prescription". For instance, in Brazil the legal regulations describe a pharmacist prescription for OTC drugs.

Lines 69-72. Around the world there are differences in the approved OTC drugs in the market. It would benefit the reader to know if all mentioned ATC categories apply to the local context and what are the most frequent classes used.

Line 87. I'm not sure which risks are the authors referring to: the risk of drugs misuse or the risks of increased morbidity and/or mortality. Also, I would suggest avoiding the paragraph here, merging with the previous one.

Lines 91-92. It reads strange: if there is an increase of health issues with OTCs, why health authorities keep the approval of more OTCs into the market? Is this the case also in Eritrea? Again, I would recommend having a better description of the Eritrean market e.g. how well are regulations enforced, not only touch in Discussion.

Lines 94-96. I would leave this sentence for Discussion or Conclusions, since at this point in the article the reader does not know if OTC consumption in Asmara is more or less severe as a public health issue.

Line 124. A reference is needed regarding the sample size formula. Did you not consider other sample adjustments besides design or post-hoc weighting of cases e.g. age, gender, education? For instance, the results show a sample with more males than females, which is not corroborated by e.g. World Bank statistics (half gender slip).

Lines 130-136. Questionnaires developed to measure attitudes (a psychological construct) have usually passed a psychometric validation process, notwithstanding being administered by an interviewer. Was this done? How sure are the authors regarding the tool validity and reliability? Who were the field researchers and how were they trained to cover 609 interviews in 20 pharmacies for 24 days?

Lines 230-232 (and next paragraphs). The comparisons made with other realities may be interesting, but caution should be exerted here. I'm not sure how reproducible were the approaches, since 2 of referenced studies addressed "specialized" instead of general population.

Line 245. This sentence seems incomplete to me.

Thank you.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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