Author’s response to reviews

Title: Helicobacter pylori infections in Ethiopia; prevalence and associated factors: A systematic review and meta-analysis

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Author’s response to reviews:

On the behalf of the authors, I would like to thank the editors and reviewers for the comments given that could significantly improve the quality of the manuscript!

Addisu Melese, corresponding author

Response to comments

To reviewer 1 and editor’s comment:

This is a systematic review and meta-analysis to infection rates of Helicobacter pylori among different areas and populations in Ethiopia. In this article, the authors found several risk factors, such as alcohol consumption, absence of hand washing, and presence of GI symptoms were associated with higher infection rate.

Response: yes, the review is done to assess the prevalence of H.pylori infection and associated factors. Thus, the review identified the mentioned associated factors with H.pylori infection. After reviewing the title; we prefer to modify it as: Helicobacter pylori infections in Ethiopia; prevalence and associated factors: A systematic review and meta-analysis

Although this is a comprehensive review, several points need to be addressed.
1. The authors provided the search strategy and keywords. Using this strategy on Google Scholar, there is 436 records; and this seems not consistent with the PRISMA flow chart in Figure 1. In addition, I can not find some unpublished articles in the reference (such as Alemayahu, 2011). I would like the authors provide the sources, and may consider if these unpublished studies should be present in this meta-analysis.

Response: the search strategy described in the manuscript is only for Pubmed database. The search strategy for Google scholar was; allintitle: helicobacter OR campylobacter OR pylori AND "Ethiopia" and provided only 37 studies. The search was also limited to June 30, 2018 and articles published later my increase the numbers of records that you found. To include unpublished study, Ethiopian University repositories were searched and ref. Alemayehu, 2011 (master thesis) was found in Addis Ababa University electronic repository.

2. In the results of risk factors of H.P infection, the authors stated: “Even though not significant; male participants (OR =…) and urban residents (OR = …) were more likely to be infected …”. In my opinion, this was not an appropriate statement because both results were statistically significant, and the pool OR can favor either side merely by chance. A more conservative and solid inference is recommended.

Response: the ORs for male (OR = 1.07; 95% CI: 0.93 – 1.23; p = 0.33) and urban residents (OR = 1.04; 95% CI: 0.74 – 1.74; p = 0.83) contain 1 in their 95% CIs; which is an indicator for non-significant association. In addition their P-values are greater than 0.05.

3. In table 1., Serology test is apparently associated with higher infection rate compared to stool antigen test. Since stool antigen is a relative new method, it is possible the trend of declined infection rate by time is confounded by the test method. I suggest the authors can analyze the effect in the stool antigen group additionally (e.g: infection rate among 2008-2013 vs. later).

Response: Your concern is acceptable and it might be true. But the decreasing trend is significant and it was since 1990 as shown in the meta-regression analysis. All studies done by using stool antigen as a primary test were conducted in 2013 and onwards. But when the analysis is done by sub-grouping in to: before 2008, in 2008-2013, and later years (2014-2017); the prevalence became 72.5%, 53.8% and 45.3%, respectively, showing a decreasing trend. Hence, the trend will not be cofounded by the stool antigen method alone.
4. The authors stated “participants with gastrointestinal (GI) symptoms were 2.2 times more likely to be infected with H. pylori…” It might be true with risk ratio, but this is not the case for odds ratio.

Response: agreed and corrected as suggested

5. This review included a large number of studies, therefore more delicate and representative analysis may be carried out. For example, 10 studies were noted to have multiple tests for validation of infection; how about the pooled results of these studies?

Response: when subgroup analysis by the number of tests used to define H. pylori infection is used, the prevalence showed differences. Hence, when one test is used alone, the prevalence was 48.1% and when more than one test was used, the prevalence became 62.9% and this difference is described in the manuscript as suggested.

Minor points:

1. The search process should be done with independent reviewers to minimize bias and missing data.

Response: The search was done independently and described in the manuscript.

2. The form of tables might revise to fit for formal publication form (Only bottom frame lines should be present).

Response: formatted as recommended!

Reviewer 2: Author make a good design of the paper, and well quality of the references. The article is helpful to establish the prevalence of helicobacter pylori in local regions.

Response: Thank you for your constructive comment!