Author’s response to reviews

Title: SERO-PREVALENCE OF TOXOPLASMA GONDII AND ASSOCIATED RISK FACTORS AMONG PSYCHIATRIC OUTPATIENTS ATTENDING UNIVERSITY OF GONDAR HOSPITAL, NORTHWEST ETHIOPIA

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Author’s response to reviews:

Dear Dr Abdolmajid Fata, dear reviewers,

Thank you very much indeed for your efforts while reviewing this manuscript and your helpful comments we addressed accordingly. Changes in the manuscript are indicated by line numbers which highlighted in grey

Reply to Dr Abdolmajid Fata:

1. Please thoroughly copy-edit your submission. We suggest you ask a native English-speaking colleague to help you with this. If you cannot improve this aspect sufficiently, we may not be able to consider your submission further

Response: We had given the manuscript to English language expert based on your comment and we corrected it accordingly

2. On page 5 in the last line after the words: (data collectors.), one point is EXTRA.

Response: We have deleted one of the extra point (Page 6, line 115)

3. On page 8, the last phrase of the last line should be corrected as: {and Mashhad, Northeastern Iran (43.2%) (19)}.

Response: We have corrected as per the comment given, (Page 11, line 222)

4. On page 17, Fig. 1, the word (Anxity) under histogram is not correct. The correct spelling is: Anxiety.

Response: We deleted Anxity and we have replaced it with Anxiety

5. I recommend you to revise the writing one more again.

Response: We have revised as per your recommendation

5. The following reference could be used in your manuscript: Zarean M, Shafiei R, Gholami, et al, Seroprevalence of Anti-Toxoplasma Gondii Antibodies in Healthy Voluntary Blood Donors from Mashhad City, Iran, Archives of Iranian Medicine, July 2017;20(7), 441-5.

Response: We include the mentioned reference on discussion part as stated below:
“In the current study, age and sex didn’t show any statistically significant association with the seroprevalence of T. gondii IgG antibody. On the other hand, a study conducted in Mashhad city (Iran), age and sex showed a statistically significant association with the sero prevalence of anti-T. gondii IgG antibody in which females and study participants above the age of 40 years were at risk of infection” (Page 13, Line 269-273)

Replay to Hossein Mahmoudv

1. Keywords must be different from the title words

Response: We made a modification of key words as stated below:

“Toxoplasmosis, Psychiatric, Ethiopia, Prevalence” (Page 3, Line 48)

2. Introduction too long and must be rewritten

Response: We have deleted some of the paragraphs has rewritten the introduction by incorporating new paragraphs and editing some of the existing paragraphs

3. Add the year of sample collection in the methods section

Response: We have added the study period on the last line of ‘Study area and Study design’ section Page 6, Line 104

4. What was the inclusion and exclusion criteria?

Response: Psychiatric patients with the age of 18 and above and willing to participate in the study were included in the study but pregnant women and Human Immunodeficiency Virus (HIV) positive individuals were excluded- we have added this information in the method section Page 6, Line 101-104

5. Add permission No. (ethics) to the text.

Response: We include permission number in the text as it is written below

“The study was approved by the School of Biomedical and Laboratory Science Research and Ethical Review Committee (reference no. SBMLS/870/10)” Page 14, Line 298-299

6. Is there anyone who was positive for both IgG and IgM antibodies?

Response: We didn’t have a study participant who was positive for both IgG and IgM

7. Add some relations and possible mechanisms of toxoplasmosis and psychiatric diseases to discussion.
Response: In the second and third paragraphs of the discussion we add the following information that can explain the possible mechanisms of toxoplasmosis and psychiatric disease:

“A number of investigations showed that chronic Toxoplasma infection may alter human behavior and causes psychiatric disorders. This behavioral changes related to infection with T. gondii may be due to the parasite itself, which causes infection with nerve damage. The cytokine IFN-γ, is mainly responsible for immunological defense against T. gondii is essential in all infected tissues, including the central nervous system” Page 10-11, Line 209-213

Moreover as T. gondii is a neurotropic organism with a complex mechanism of access to the brain where it encysts in glial cells, neurons and astrocytes. Damage is characterized by many foci of enlarging necrosis and microglia nodules. It might also incorporate its genome into the cellular Deoxyribonucleic acid with the potential of altering brain function or modifying the growing neuronal cell in vitro” Page 11, Line 214-218

8. References must be rewritten according to the journal format

Response: As we have used endnote software we didn’t make any change in the reference

Replay to Mun-Yik Fong:

1. Redundancy: Page 3, lines 50-55: An institution based cross-sectional study was conducted among psychiatric out patients at University of Gondar University of Gondar Comprehensive and Specialized Hospital, psychiatric out patient's clinic, Gondar, Northwest Ethiopia. (The first 'out patients' should be replaced with 'patients', and the second 'out patient' should be 'Outpatient')

Response: We have replaced the first out patients with patients and we have corrected out patient as outpatient and we deleted one of the Redundancy University of Gondar Page 5, Line 95-96

2. Redundancy: Page 4, line 32: During data collection psychiatric nurses were recruited for data collection ... (Should be written as: Psychiatric nurses were recruited for data collection ...)

Response: We deleted “during data collection” and we have written it as stated below

“Psychiatric nurses were recruited for data collection” as per the comment Page 6, Line 114-115

3. What is the relevance of Human immune deficiency virus testing in the study? (Page 5, lines 35-42). Furthermore, there is no mention of HIV testing results in the Results or Discussion sections.
Response: We did Human immune deficiency virus testing because individuals who had HIV were excluded from the study. Thus, to identify them we did HIV test.

4. **What is VCT? (Page 5, line 1)**

Response: In this study we had a control group and our control group were individuals attending Volunteer Counseling and Testing Clinic which is one of the clinic in the University of Gondar Comprehensive and Specialized Hospital, so VCT is an abbreviation which refers for Volunteer Counseling and Testing: we include the long form of VCT as Volunteer Counseling and Testing for clarity in the manuscript Page 7, Line 128

5. **Urine HCG test (Page 5, lines 27-31) is poorly described.**

Response: We have rewritten this section as it is stated below:

“For excluding pregnant women urine HCG (human chorionic gonadotropin) test was determined for both the cases and control groups by using a rapid chromatographic immunoassay test strip (Assure Tech Co., Ltd, Hangzhou) which detects the hormone HCG in urine sample. This hormone is found only in the body during pregnancy” Page 7, Line 140-144

6. **Improper words usage, examples:** [Page 6, line 7: Data was coded, entered, and cleaned - what is 'cleaned'?
Page 6, line 28: A permission letter was also taken - 'taken' is not the correct word; Page 8, line 47: ... so we are forced to say.... - 'forced' is not correct]

Response: Data cleaning is the action of detecting and correcting (or removing) corrupt or inaccurate records from a record set, and refers to identifying incomplete or incorrect parts of the data and then replacing, modifying, or deleting the dirty or coarse data.

Thus, before analyzing the data, we have done data cleansing by arranging the entered using data descending and ascending methods, that is one way of keeping the quality of our data.

Since taken is not appropriate we have replaced it with the word obtained Page 14, Line 300

so we are forced to say that this is the first study on the sero-prevalence of T. gondii infection in psychiatric patients in Ethiopia- this statement was replaced by” Based on electronic data search, no literatures were found related with the current study in Ethiopia; so that the present study was conducted in order to compare the prevalence of T. gondii infection between patients with psychiatric disorder and controls” Page 14, Line 203-206

7. **The Discussion section is poorly written. The authors mainly cited findings from other African countries, without providing deeper argument or explanation for their findings.**

Response: We add some additional explanation for the difference in the prevalence of T. gondii in our study compared with other researchers finding
E.g “The most possible explanation for such differences in sero-prevalence of T. gondii infection might be due to differences in culture, socio economic status, populations sampled, climatic condition, literacy status of the study participants, personal hygiene, types of laboratory method used and environmental exposure” Page 11, Line 225-228

“This is mainly due to the fact that, cats are a definitive host for T. gondii, play an important role in the transmission and continuing this parasite in nature” Page 12, Line 250-252

8. In the Background section, the paragraphs describing symptoms or clinical manifestations of toxoplasmosis (paragraphs 2, 3, 7 and 8) should be continuous and not separated.

Response: We have rewritten the background section and we arrange together paragraphs that indicate clinical manifestations of toxoplasmosis