

Review of: "Liver Function Test Abnormalities and Associated Factors Among Liver Disease Patients at the University of Gondar Comprehensive Specialized Hospital Northwest, Ethiopia: Cross Sectional Study"

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Potential competing interests: No potential competing interests to declare.

After reviewing the article, I highly recommend it for publication in the Qeios Journal with some revisions. However, the article would benefit from significant revisions. The manuscript needs to have more scientific rigor in its conception and write-up. Additionally, the language and writing style require substantial improvement to ensure clarity and coherence throughout the manuscript. Please consider the following comments, which will help improve the overall manuscript:

Abstract

1. It is generally better to use abbreviations and the complete term in the abstract. Please include this information for all terms mentioned for the first time, such as "ALT, ALD, AOR, AST, and CI" in the abstract.
2. Results: *Among 307 patients, 117 (38.11%, 95% CI: 32.64%, 43.57%) had abnormal ALT, 212 (69.06%; 95% CI: 63.85%, 74.25%) had abnormal AST, and 168 (54.72%, 95% CI: 49.12%, 60.32%) had abnormal total bilirubin.* Modify the data to reflect that there is more than one abnormality.

Introduction

3. Please ensure that all abbreviations are initially written with complete spelling the first time they are used. In the introduction, "LFT" was initially used as an abbreviation. Please make these corrections throughout the article. However, the abbreviation for alcohol-related liver disease must be mentioned in the introduction section, while ALD (Alcoholic Liver Disease) abbreviations were used later in the manuscript.
4. The introduction would benefit from improved organization and paragraph use. Consider moving the 5th paragraph to the 3rd and placing the paragraph about liver functions before the section discussing "The LFT." Please revise accordingly.
5. Please clearly articulate the novelty of the research. It is essential to state and emphasize the unique aspects of this work. The study objectives need to be revised to explicitly outline the study's distinct aims and new insights regarding the well-established association between elevated AST, ALT, and total bilirubin and liver disease in the existing literature. Kindly rewrite the study objectives. For example, it is necessary to expand the existing literature to better support healthcare professionals in Ethiopia in developing local recommendations for the clinical prognosis and treatment approaches for patients with elevated levels of these indicators. Furthermore, a study involving a large cohort of patients with liver disease is needed.

- The paper contains several grammatical errors that require careful review and thorough revision. It is also important to diligently recheck and enhance the quality of the English language used.

Methods and Materials

- The Methods and Materials section must be revised and described in more detail, and irrelevant information regarding hospital location must be removed if the authors have no justification for choosing a particular area.
- Please mention the study design: is it a prospective or retrospective study?
- Please elaborate. How did the authors calculate the sample size?
- Please add the questionnaire attachment as a supporting file to the supporting data section and mention it in the methodology section.
- Kindly elaborate on the questionnaire parameters in the "Data Collection" section.
- In the methodology section, it is essential to explicitly outline the comprehensive inclusion and exclusion criteria and ethical considerations. It would be beneficial to specify whether the study participants were recruited from the outpatient department (OPD) or if they were inpatients. Furthermore, it would be helpful to indicate if the participants had a known history of liver disease and whether they attended regular follow-up appointments or were randomly selected.
- Please clarify: In this study, is there any specific cutoff value for liver function parameters (ALT, AST, and total bilirubin) related to sample collection?

Results

- Please write a complete form of all abbreviations, such as HIV and HBV.
- In addition, 51 (16.61%) participants were anemic, 39 (12.70%) had a history of blood transfusions, and 33 (10.75%) had **heart disease**.* Please align the data regarding heart disease with Table 1.
- Of the study participants, 269 (87.91%) had a **habit of feeding meat**, 287 (93.49%) had a **habit of drinking tea or coffee**, and 237 (77.1%) had a habit of consuming vegetables. However, 262 (85.34%) did not have a regular physical exercise habit, and only 11 (3.58%) had a smoking habit.* Please align the data for "habit of feeding meat" and "drinking tea or coffee" with Table 2.
- In Figure 1, ensure that the representation reflects frequency rather than count, aligning with the labelled y-axis. Revise the title from "Magnitude" to "Frequency" for clarity. Also, correct "both abnormalities" to "all liver abnormalities" and rectify the legend of the figure and tables.
- From the total study participants, 117 (38.11%, **95% CI: 32.64%, 43.57%**), 212 (69.06%; **95% CI: 63.85%, 74.25%**), 168 (54.72%, **95% CI: 49.12%, 60.32%**), of the study participants had abnormal ALT, AST, and total bilirubin, respectively. Furthermore, 78 (25.40%) study participants had all liver function abnormalities (Figure 1).* Figure 1 does not mention any confidence interval values information, and please represent the confidence interval value in one form (percentage or without percentage) throughout the manuscript. Furthermore, to enhance readability, separate the confidence interval with a dash (e.g., AOR=0.45; 95% CI: 0.21 - 0.95).

Discussion

19. The discussion section is well written, but the authors should put more effort into it by incorporating the latest and most relevant references. The discussion should be more detailed and contextualized within existing literature, and the results should not be repeated. For example, *the study's findings indicated that the overall prevalence of abnormal liver function test results was 38.11% (95% CI: 32.64%, 43.57%) for ALT, 69.06% (95% CI: 63.85%, 74.25%) for AST, and 54.72% (95% CI: 49.12%, 60.32%) for total bilirubin. Additionally, 25.40% of study participants exhibited all liver function abnormalities.* Please mention the results only in percentage form and in terms of significance.
20. Reorganizing the narrative is essential to improving the flow of the discussion and thoroughly analyzing the study's findings. Instead of just comparing the results to existing literature, we should delve deeper into the implications of the findings. The manuscript should offer thoughtful interpretations of the data, going beyond a simple recap of the results to provide valuable insights for clinical practice.

Conclusion

21. In the conclusion, novel insights should be highlighted.

"In liver diseased patients, most patients rise AST followed by bilirubin. About 1/4th of the patients indicate all liver enzyme abnormalities. Females having the hepatic virus, blood transfusion history, lack of vegetable dietary habits, lack of regular physical exercise, and ALD are anemic risk factors for liver function tests. And there is a moderate correlation between AST, ALT, and bilirubin with APTT and PT."

22. Once again, the authors should have mentioned the complete forms of APTT and PT.
23. Throughout the manuscript, the authors did not discuss the Activated Partial Thromboplastin Time (APTT) and Prothrombin Time (PT), yet they mentioned a moderate correlation in the conclusion paragraph. The APTT and PT data do not align with the results section. Kindly rectify the conclusion paragraph.
24. The authors have made a significant contribution, especially given Ethiopia's data scarcity. However, the findings are not novel and are consistent with the work of other researchers worldwide. Nevertheless, this epidemiological data will be valuable for implementing improved health programs in the country.