Review of: "Rates and Reasons for Relapse of Pulmonary Tuberculosis in Adults — "Case of the MUYA Urban Health Zone""

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Potential competing interests: No potential competing interests to declare.

Introduction

The intro provides context on tuberculosis as a global health issue, highlighting its complexity due to COVID-19, HIV/AIDS, and drug-resistant strains. It summarizes the consequences of non-adherence to TB treatment and cites relevant literature. The section provides details on drug resistance survey results in the DRC, localizing the problem to Mbujimayi and setting up the focus on the MUYA Urban Health Zone. While the introduction provides a logical flow, some minor enhancements could further strengthen the framing of the study. Adding more specificity and context in a few areas could help strengthen the introduction. But overall, it provides a clear rationale and background to set up the research questions. The suggested areas for improvement are summarized as:

- The reference to WHO 2019 is better replaced by the most updated and recent one.
- Clarify acronyms like WHO, DRC, and AIDS the first time they are used.
- Consider adding 1-2 sentences on the local/regional importance of addressing relapse, given the high percentages seen previously in the Mbujimayi area.

Methodology

The study used a quantitative, cross-sectional design, which is appropriate for the aim of understanding the rates and factors associated with TB relapse. The study population consisted of a cohort of cured TB patients, which is important context for the data collected. The study time period was from December 1 to December 31, 2022, which helps establish parameters and reproducibility. The sample size was proportional to the registered TB patients in the CSDT register, justifying the sample and helping ensure it is representative. The total sample size retained was 143, with a breakdown between relapse and recovery groups. The sampling technique used was "non-probability convenience sampling," which was explicitly named to provide transparency. A questionnaire was used to collect single-point data via survey, and it was designed based on study variables, making it a targeted and relevant tool.

While the key elements are covered, more specifics around study instruments, data collection/management processes, and the analytical plan would strengthen methodological rigor and transparency. Please provide more information on the following:

- Clarify if and how the excluded participants were different from those who were included in the study.

- Can you elaborate on how the questionnaire was designed? How were variables and questions developed and selected? Were they validated?
- Was the questionnaire self-administered or interviewer-administered? - Please specify how relapse cases were defined and identified for inclusion in the study.
- Can you describe the process of data collection? Who collected the data, where was it collected, and over what time period?
- It would be helpful to include information on ethics approval and consent.
- Finally, please state how the collected data will be analyzed to answer the research questions.

Result

- Presenting demographic characteristics in a clear table is effective for descriptive statistics.Summarizing key findings within each category is helpful for readers. Including percentages enhances understanding of distribution within variables. A second table clearly displays bivariate analysis results. Interpreting statistically significant relationships is appropriately done. Explaining the p-value threshold aids readers' understanding of significance. No significant relationships found for organizational factors is clearly stated. Singling out the one significant patient-related factor guides interpretation. Summarizing treatment adherence findings succinctly conveys results.

Overall, the results are effectively presented through well-organized tables and descriptive interpretation of key findings. Statistical relationships are appropriately analyzed against the significance criteria. Some areas for potential improvement include:

- What is the age range and mean age with SD.
- In Bivariate analysis: Present the full statistical output in a table rather than just p-values. This allows readers to assess things like odds ratios/relative risks where applicable. Provide 95% confidence intervals for measures of association where appropriate.

Discussion

Discussion of the Results of the Descriptive Analysis

Clearly relating current findings to prior literature helps contextualize results. Comparing magnitudes and directions of associations enhances interpretation.

Discussing similarities and differences between studies strengthens validity and generalizability. Potential reasons for differences could be further explored.

Presenting findings in the context of relevant theories/frameworks (e.g., reasons for non-adherence) adds analytical depth. Expand on clinical/practical implications - how can findings inform local interventions to reduce relapse?

Address limitations such as convenience sampling, self-reported exposures, risk of recall bias. Consider strengths like the use of validated questionnaires and inclusion of important confounders. Suggest directions for future research like

qualitative studies to better understand contextual factors.

Discussion of the Results of the Bi-variate Analysis

This section is not well discussed. The following areas need improvement:

- Explore possible reasons for discrepancies in factors found to be significant.
- Address any methodological differences between studies that could contribute to variations.
- Qualify interpretation by noting the current study is association, not causation.
- Discuss clinical implications of modifiable risk factors found to be significant.
- Suggest how addressing these factors could reduce relapse at the population level.

References

The references list utilizes a diverse range of credible published and gray literature sources to support statements made. Consistent formatting allows for accessibility.

- Citations are generally in a consistent format, with author name(s), date, and article/source title provided, which allows for easy identification.
- Dates help provide context for when the evidence/data was collected or published.
- Major international organizations like WHO are frequently referenced, utilizing their expertise and globally recognized data.
- Multiple local/regional studies are cited, which helps establish relevance to the immediate context.
- References appear reasonably up to date, with most within the last 10-15 years. A few older ones still maintain relevance.
- Availability of full texts couldn't be verified, but publication details provided facilitate searches.