

# Review of: "Medical students' disease status of COVID-19: A multicenter study"

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**Potential competing interests:** No potential competing interests to declare.

The study titled "Medical students' disease status of COVID-19: A multicenter study" presents an important investigation into the COVID-19 status among medical students in Khyber Pakhtunkhwa. However, there are several critical points to consider, and these comments are aimed at enhancing the rigor and comprehensibility of the research.

1. **\*\*Clear Objective\*\***: The study addresses the COVID-19 status among medical students, but a more specific research question or objective would provide better guidance for the analysis. A clear hypothesis or research aim could help in framing the study more effectively.
2. **\*\*Methodology\*\***: While the study employs a cross-sectional design, it is imperative to provide additional details regarding the sampling technique. Information on how the sample was selected and its representativeness is essential to assess the generalizability of the findings. Moreover, specifying the timeframe of data collection is crucial for understanding the temporal context of the study.
3. **\*\*Comparative Analysis\*\***: The claim that the COVID-19 status in Khyber Pakhtunkhwa medical students is comparable to the rest of the world is intriguing but requires a more comprehensive comparative analysis. Including findings from similar studies conducted in other regions or countries would provide a meaningful basis for this assertion.
4. **\*\*Limitations\*\***: The abstract lacks a mention of the study's limitations, which is vital for interpreting the results in the appropriate context. Addressing potential sources of bias or error can contribute to a more nuanced understanding of the study's outcomes.
5. **\*\*Causality\*\***: While the study identifies associations, such as clinical students being more susceptible to infection, it falls short of establishing causality or exploring potential underlying reasons for these findings. Investigating the factors contributing to these patterns would strengthen the research.
6. **\*\*Generalizability\*\***: The assertion that safety measures are on par with the developed world should be substantiated with broader contextual data and not solely reliant on medical student infection rates. A comprehensive analysis of government policies, healthcare infrastructure, and public adherence to safety measures would provide a more well-rounded view.

Turning to the "Materials & Methods" section:

7. **\*\*Sampling Method\*\***: The use of census sampling is acknowledged, but it's crucial to recognize that this method may introduce selection bias. Discussing the potential impact of this bias on the study's outcomes would enhance the validity of the results.
8. **\*\*Questionnaire\*\***: While the questionnaire is mentioned, providing comprehensive information about its development, validation (if any), and piloting would bolster the study's transparency and the reliability of the data collected.
9. **\*\*Data Collection\*\***: Specifying the exact timeframe of data collection is essential for contextualizing the findings within the evolving COVID-19 pandemic. Additionally, elaborating on the procedures used for in-person informed consent would ensure that ethical standards were upheld.
10. **\*\*Data Entry and Analysis\*\***: Mentioning the statistical software used for analysis (SPSS v. 26.0) is commendable. However, providing details about the specific statistical methods employed, such as descriptive statistics and regression analysis, would assist readers in comprehending the analytical approach. Further information about how the relative risk for COVID-19 was computed between clinical and preclinical years is warranted.
11. **\*\*Ethical Approval\*\***: While the study mentions obtaining ethical approval, it's equally important to provide insights into the ethical considerations, particularly those concerning privacy and confidentiality safeguards for participants.
12. **\*\*Data Collection via Google Forms\*\***: The use of implied consent through Google Forms is noted. However, providing a brief description of how participants were informed about the study and their rights when using Google Forms would ensure ethical transparency.
13. **\*\*Sampling Frame\*\***: Clarifying the methodology to ensure representation from various medical colleges in Khyber Pakhtunkhwa is vital for understanding the scope of the study.
14. **\*\*Data Handling\*\***: Explaining the protocols for secure data handling, both from Google Forms and manual entry, would strengthen the study's credibility in terms of privacy and data integrity.
15. **\*\*Validity and Reliability\*\***: Addressing the validity and reliability of the data collected through the questionnaire is essential for evaluating the overall quality of the study. Providing insights into how these aspects were considered during the study would enhance its robustness.
16. **\*\*Conflict of Interest\*\***: The declaration of no conflict of interest is important for transparency, ensuring that potential sources of bias or undue influence are disclosed.

In the "Results" section:

17. **\*\*Sample Description\*\***: The information provided about the sample size and diversity of institutions is valuable. However, presenting a comprehensive breakdown of participants across all districts and colleges, including a table or additional details, would provide a more comprehensive view of the sample's representativeness.
18. **\*\*COVID-19 Frequency\*\***: While the frequency of COVID-19 among medical students is reported, including confidence

intervals or standard errors would help readers gauge the precision of this estimate.

19. **\*\*Vaccination Rate\*\***: The high vaccination rate among medical students is noted. However, discussing whether this high rate is due to specific factors like vaccine mandates or educational interventions would provide deeper insights into the context.

20. **\*\*Relative Risk\*\***: The comparison of relative risk between clinical and preclinical years is a pertinent finding. However, including confidence intervals or p-values to assess the statistical significance of this difference is essential. Furthermore, exploring potential reasons behind this difference is important for a more comprehensive interpretation.

21. **\*\*Statistical Analysis\*\***: Providing additional details about the statistical methods used to calculate the relative risk and other statistical analyses would improve the transparency of the study's methodology.

22. **\*\*Discussion of Findings\*\***: The "Results" section should be followed by a "Discussion" section where the authors can interpret the findings in the context of existing literature and explore potential implications for healthcare policy and practices.

23. **\*\*Limitations\*\***: Acknowledging any limitations of the study that may affect the interpretation of results, such as sampling or recall bias, is crucial for transparency.

24. **\*\*Visual Aids\*\***: Incorporating tables or figures to present key data visually can enhance the accessibility and understanding of the results.

In summary, while the study provides valuable initial insights, addressing these critical points and enhancing the clarity and transparency of the research can contribute to a more robust and informative study.