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Comment on “Effectiveness of homologous or heterologous immunization regimens against SARS-CoV-2 after two doses of inactivated COVID-19 vaccine: A systematic review and meta-analysis”

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Dear Editor,

I have read with great interest the article by Zhang et al. that was published in *Human Vaccines & Immunotherapeutics*.¹ The authors have conducted a systematic review and meta-analysis to investigate the efficacy of two doses of inactivated coronavirus disease 2019 (COVID-19) vaccines in persons with no prior immunization, along with the effectiveness of homologous or heterologous COVID-19 booster regimens in healthy people who had already received a primary vaccination series with two doses of an inactivated vaccine, on various outcomes.

On May 5, 2023, the global health emergency of the COVID-19 pandemic was declared to be over by the World Health Organization (WHO), and although the healthcare sectors, besides the public, may have endured the emergency phase of the COVID-19 pandemic, infectious endemics of severe acute respiratory syndrome 2 (SARS-CoV-2) around the globe are predicted, and this worldwide threat persists.^{2,3} After the emergence of the SARS-CoV-2 Omicron variant, the pandemic took a different trajectory, and the new subvariants developed the ability to escape immunity acquired from infections with lineages before the Omicron variants.^{4,5} Vaccine-induced immunity may reduce the need for antiviral agents in managing SARS-CoV-2 infections by enhancing the body's natural defenses. This decreased reliance on antiviral drugs could help prevent the emergence of resistant variants, as it lessens the selective pressure on the virus. Ultimately, prioritizing vaccination can contribute to more effective and sustainable strategies for managing the pandemic while aligning with antimicrobial stewardship principles.⁶ As a result, several investigations support the development and administration of updated vaccines against COVID-19.^{7–9} Furthermore, in their interim guidance, the WHO Strategic Advisory Group of Experts on Immunization recommends an additional COVID-19 vaccine booster dose for several groups, and older adults, as well as those with significant underlying conditions or severe obesity, are among the high-priority-use group.¹⁰ Taken together, the accumulating evidence for the administration of booster vaccines underscores the importance of the work conducted by Zhang et al.¹

In their conclusion, the authors have stated, “the results of our study indicated that whether heterologous or homologous

COVID-19 boosters provided good protection, with heterologous boosters being more desirable.” While this conclusion may have a profound impact on future guidelines on using COVID-19 vaccines, I respectfully urge that “either” should be used instead of “whether” for greater accuracy and persuasiveness.

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Notes on contributor

Dr. Amin Sharifan is a PhD candidate at the University for Continuing Education Krems. He is also a member of the Cochrane Early Career Professionals Steering Group. He combines his expertise in evidence-based methodologies and experience as a hospital pharmacist to advance evidence-based medicine and public health. Dr. Sharifan's research interests span non-communicable diseases, infectious diseases, and acute care, which reflect his commitment to addressing critical health challenges through evidence-based approaches. His work aims to bridge the gap between research and practice to ensure that evidence-based practices are effectively implemented in clinical settings to improve patient outcomes and public health initiatives. As a volunteer, he is also an active peer-reviewer for various academic journals and has served as a reviewer for several conferences, including IDWeek and Global Evidence Summit, along with the UNDP Bureau for Policy and Programme Support to the Sustainable Development Goals.

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Author contributions statement

AS conceptualized, designed, retrieved data, drafted the paper, and revised it critically for intellectual content, and he agrees to be accountable for all aspects of the work.

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