



Letter to the Editor Regarding “Comparative Immunogenicity and Neutralization Potency of Four Approved COVID-19 Vaccines in BALB/c Mice”

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Dear Editor

We are writing to discuss the article titled “Comparative Immunogenicity and Neutralization Potency of Four Approved COVID-19 Vaccines in BALB/c Mice” (1). The study examined the immunogenicity and neutralization efficacy of four COVID-19 vaccines licensed in Iran in BALB/c mice. The vaccines included PastoCovac Plus, Sinopharm, SpikoGen, and Noora. The results showed that all four vaccines induced seroconversion in immunized animals and generated significant levels of anti-vaccine antibodies. Notably, PastoCovac Plus and Sinopharm produced higher levels of anti-RBD antibody titer compared to Noora and SpikoGen. One limitation of the study is the lack of detailed explanation for the differences in antibody responses and neutralization effectiveness among the vaccines. Future research could focus on identifying specific components of the vaccines that contribute to their immunogenicity and neutralizing efficacy. Understanding these mechanisms may lead to the development of more effective vaccines or vaccine combinations. Another limitation of the study is its exclusive focus on antibody responses and neutralization efficacy in BALB/c mice. To validate the findings,

future studies could include human clinical trials or other animal models. Additionally, testing the vaccines against various viral variants could provide valuable information on their effectiveness against emerging strains.

In conclusion, our study revealed significant sociodemographic disparities in COVID-19 vaccination rates, particularly in relation to booster shots. Individuals identifying as Black or Latinx, as well as those facing poverty or food insecurity, were less likely to receive multiple vaccine doses compared to their White and Asian counterparts. Additionally, vaccine uptake was lower among individuals without health insurance or regular healthcare providers. These findings highlight the importance of addressing and reducing disparities in vaccine access and compliance to ensure equitable protection against COVID-19.

REFERENCES

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AUTHOR'S RESPONSE

Dear Editor

We appreciate the comments raised on our paper accepted for publication in IJI (doi: 10.22034/iji.2024.101060.2728). The commenters pointed out some limitations of our study regarding the clarification of the processes responsible for the variations in antibody response and virus neutralization potency of the vaccines included in this study. They suggested investigating the constituents of the vaccines to gain further insight into the components responsible for enhancement of vaccine efficacy. In fact, we have discussed all these issues in detail in the discussion of our article, taking into account the structure of the immunizing antigens, their expression profile in either eukaryotic or prokaryotic systems, the nature of the adjuvants, and the possibility of degradation or denaturation of the antigens,

etc. The commenters also proposed validating the results through clinical trials in human as well as investigating the neutralization potency on different viral variants. Conducting a comparative assessment on human samples has also been highlighted in our paper. However, we did not recommend performing experiments on other virus variants, such as Omicron or its subtypes, because two of the vaccines (SpikoGen and Noora) failed to induce an appreciable virus neutralization response to the SARS-CoV-2 Delta variant. Thus, we could not expect any neutralization effect against highly mutated variants, such as Omicron.

Finally, the conclusion paragraph provided by the commenters, regarding their data on the influence of sociodemographic and nutrition parameters on the immunogenicity of COVID-19 vaccines is not relevant to our study and cannot be interpreted in light of the findings reported in our paper.