

# Seroprevalence of SARS-COV-2 infection in the general population of Nepal during the first and second generalized waves of the COVID-19 pandemic -2020-2021

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## Abstract

Few seroprevalence studies were performed on coronavirus disease (COVID-19) in Nepal. Here, we aimed to estimate seroprevalence and assess risk factors for infection in the general population of Nepal by conducting two rounds of sampling. The first round in October 2020 at the peak of the first generalized wave of COVID-19 and the second round in July-August 2021 following the peak of the wave caused by the delta variant of SARS-COV-2. We used cross-sectional probability-to-size (PPS)-based multistage cluster sampling to estimate the seroprevalence in the general population of Nepal at the national and provincial levels. We tested for the presence of anti-SARS-CoV-2 total antibody using the WANTAI SARS-CoV-2 Ab ELISA kit. In Round 1, the overall national seroprevalence was 14.4%, with provincial estimates ranging from 5.3% in Sudurpaschim to 27.3% in Madesh province. In Round 2, the estimated national seroprevalence was 70.7%, with the highest estimated seroprevalence in Madesh Province (84.8%) and the lowest in the Gandaki Province (62.9%). Seroprevalence was comparable between males and females (Round 1, 15.8% vs 12.2% and Round 2, 72.3% vs. 68.7%). The seroprevalence in the ecozones—terai, hills, and mountains—was 76.3%, 65.3%, and 60.5% in Round 2 and 17.7%, 11.7%, and 4.6% in Round 1, respectively. In Nepal, COVID-19 vaccination was introduced in January, 2021. At the peak of the first generalized wave of COVID-19, most of the population of Nepal remained unexposed to SARS-COV-2 and towards the end of the second generalized wave in April 2021, two-thirds of the population was exposed.

Title Page:

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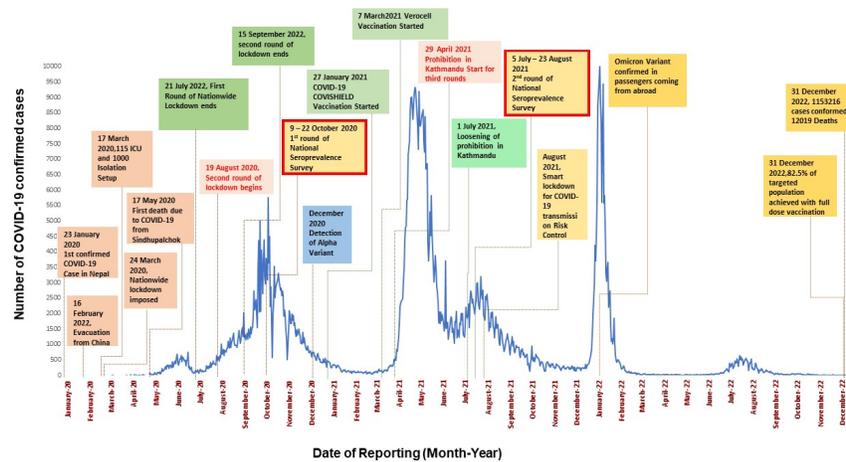
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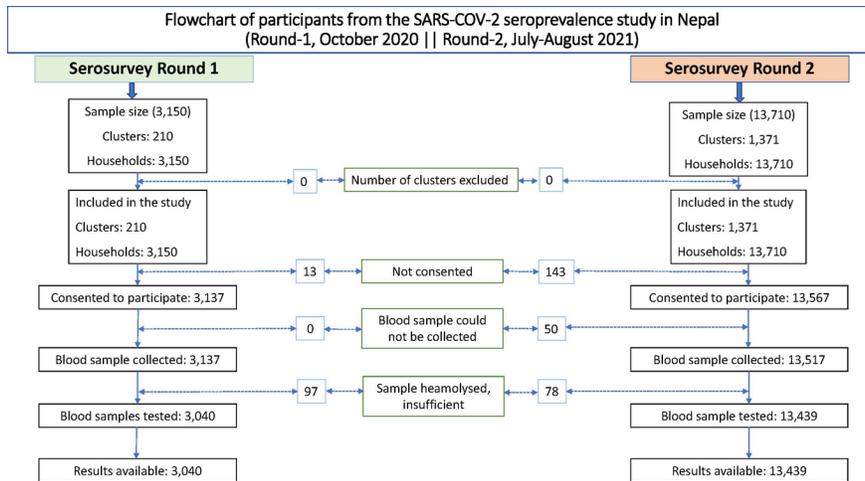
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