

Quantifying the Impact of different Public Health and Social Measures on Population Mixing vis-à-vis Contact Matrices in Hong Kong

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Background

Public health and social measures (PHSMs) have been used to control the COVID-19 pandemic in Hong Kong and worldwide, but they carry high economic and social cost.

We aim to understand population mixing patterns under different PHSMs, and respective attitudes from the public.

Results

We recruited 6740 participants (17 Sep 2021 to 31 Mar 2023). Both the mean number of contacts and average overall duration of contacts increased when PHSMs such as group of 4 gathering limit and school closure were lifted after the 5th COVID-19 wave in Hong Kong in early 2022.

Figure 2. (a) Number of contacts. (b) Duration of contacts.

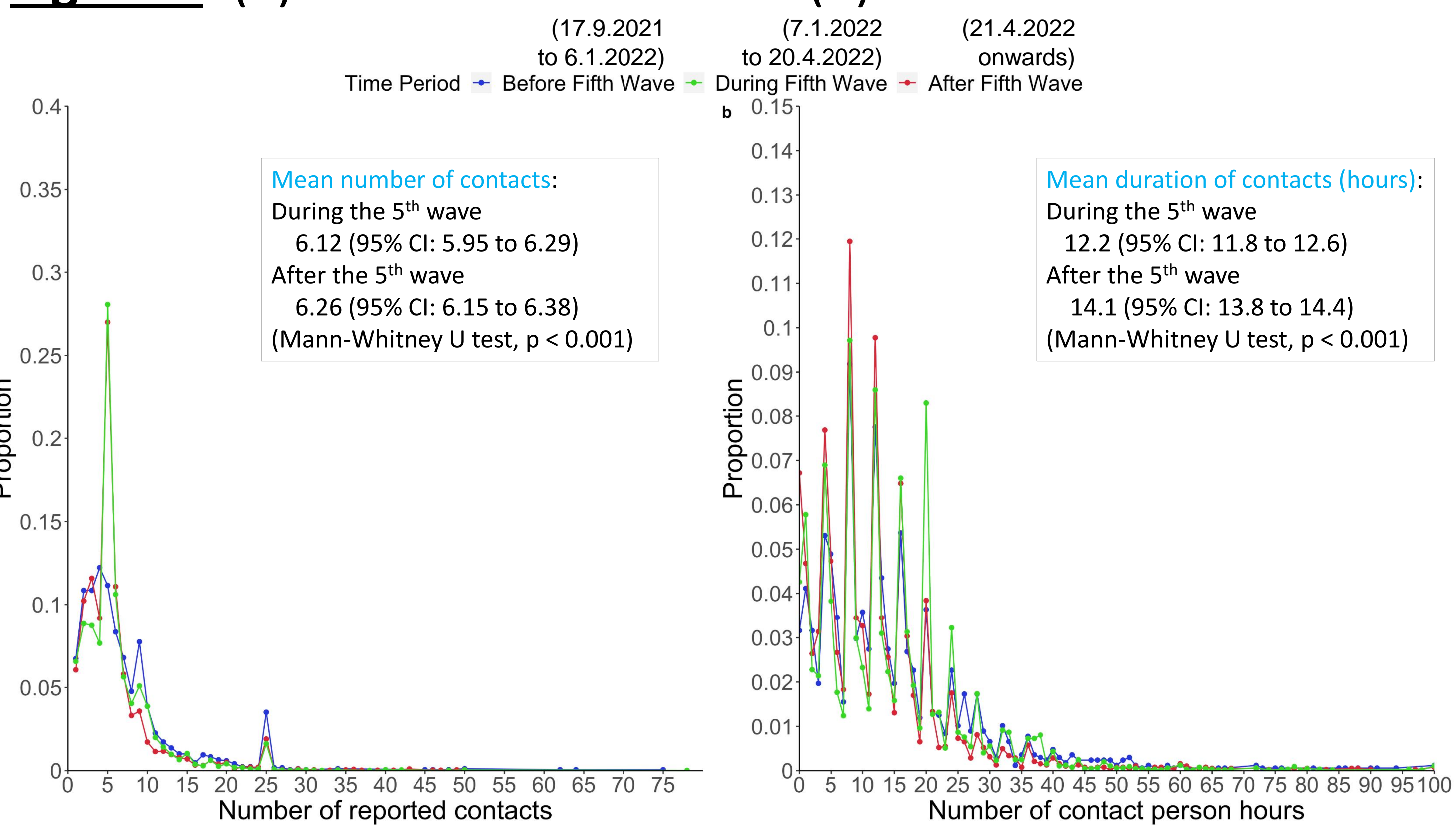
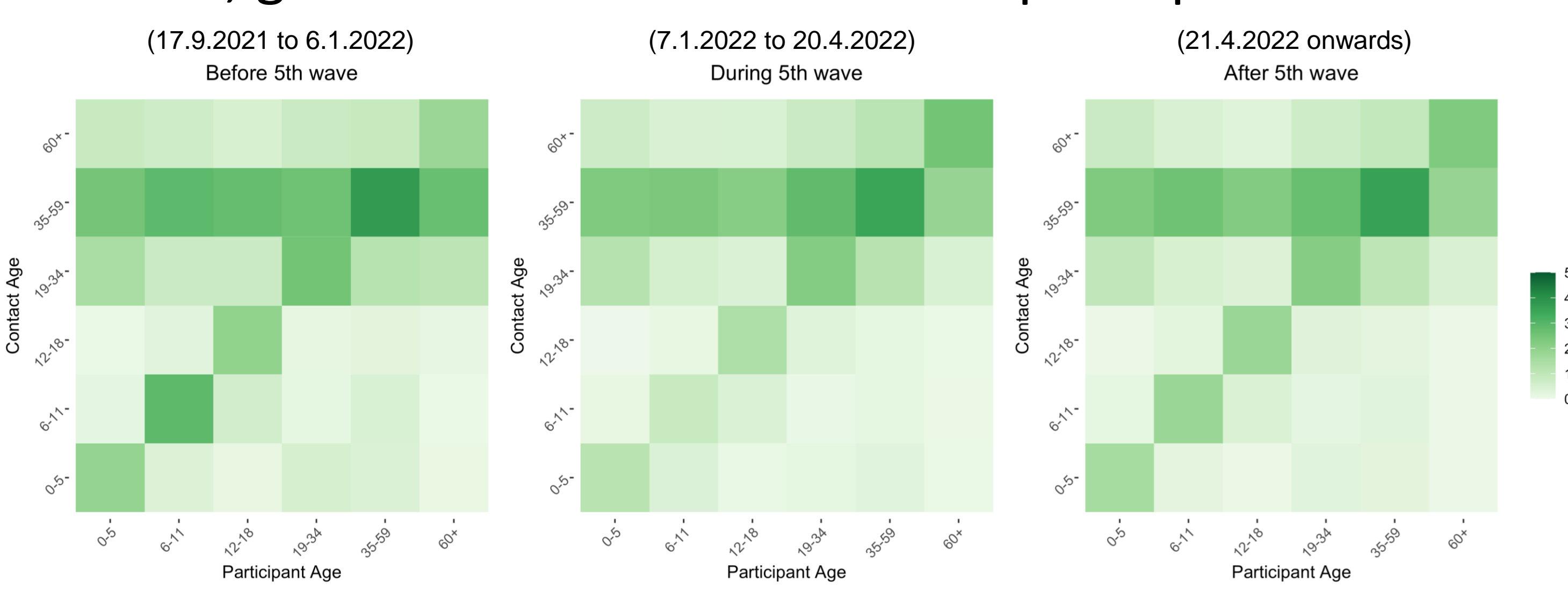


Figure 3. Contact matrices of the average number of reported contacts, generated with 1000 bootstrap samples.



Take Home Messages

1. This study highlights the changes in population mixing behaviors under PHSMs in Hong Kong and provides insights on behavioral drivers of COVID-19 transmission.
2. The reported contacts increased when PHSMs were lifted after the 5th COVID-19 wave.

Methods

We surveyed participants from the general population for completing a questionnaire which consisted of a contact diary. They were asked to report all contacts made in the past 24 hours, and questions concerning attitudes towards various PHSMs. Participants completed the questionnaire twice, once on a weekday and once on a weekend.

Figure 1. Estimated mean number of contacts.

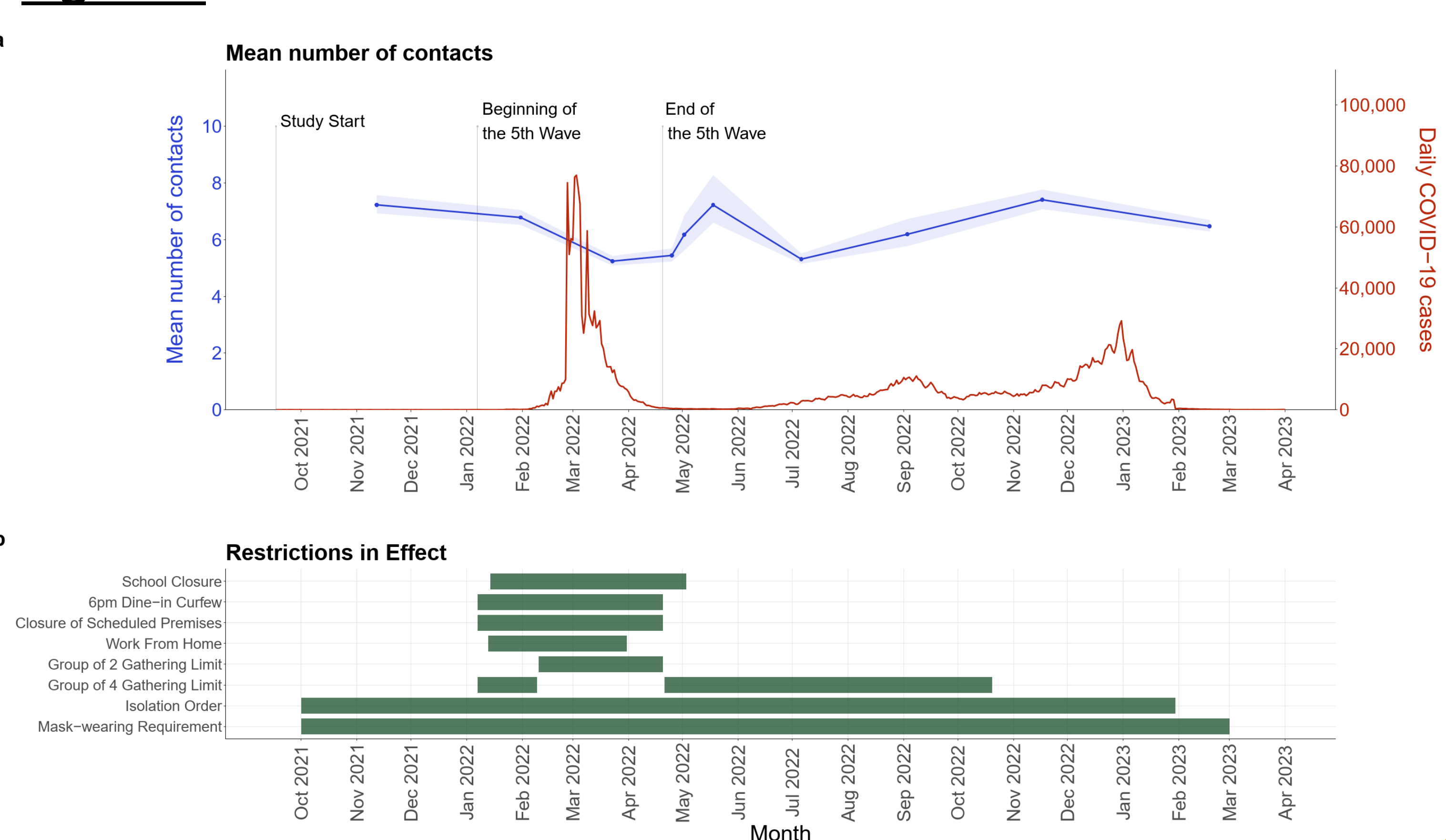
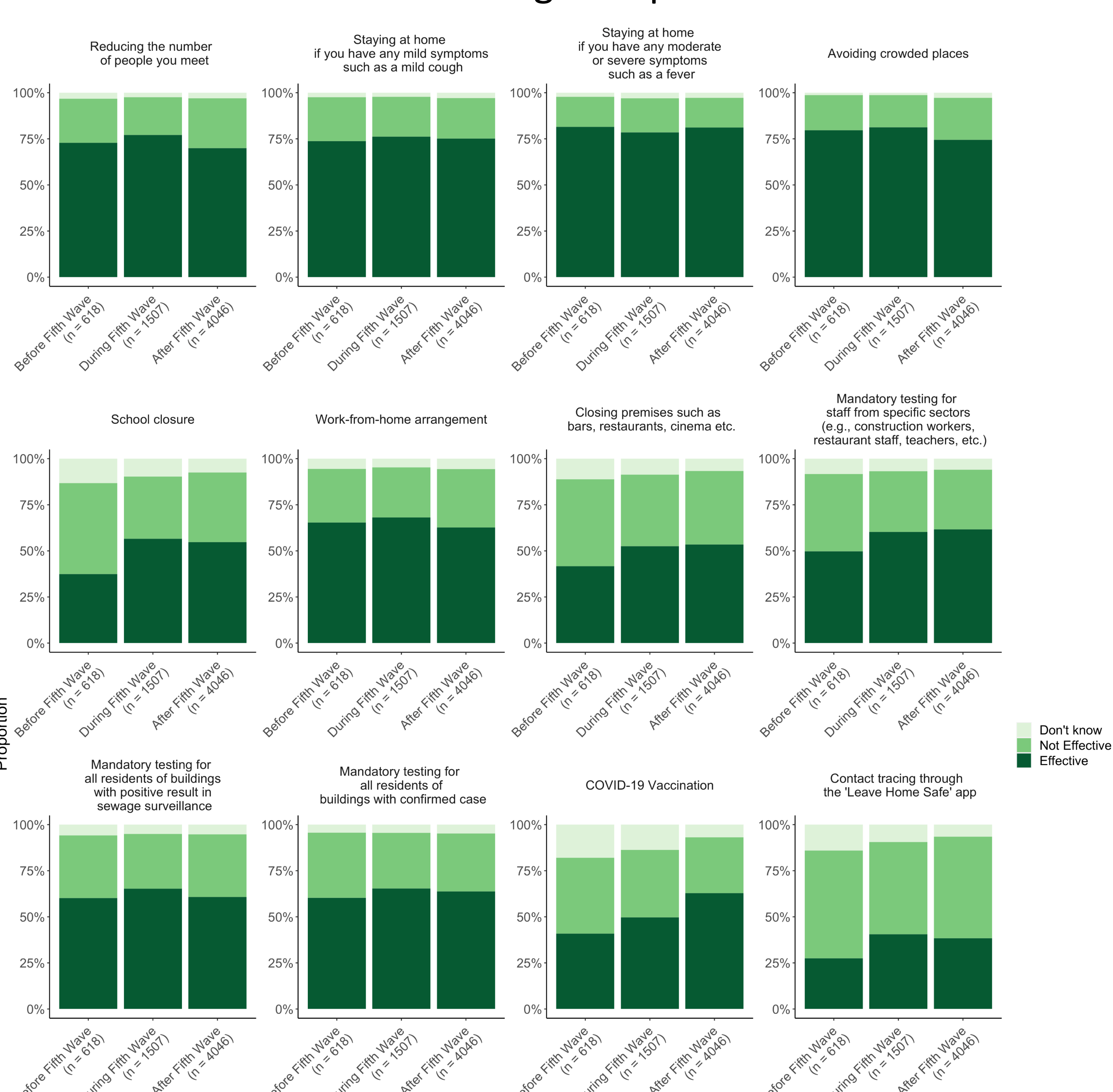


Figure 4. Attitude towards the effectiveness of public health and social measures in slowing the spread of COVID-19.



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