Ingroup bias and othering process in close social ties: How Americans perceive the infection status of others during the COVID-19 pandemic

Keywords: Social networks, COVID-19, ingroup bias, homophily, disease transmission

Extended Abstract

During times of crisis, social networks often become more tightly knit as individuals seek support and comfort from their close social relationships (1). However, this can lead to the formation of homogenous network environments as people tend to connect with others who are in similar situations, generating a preference for similarity, known as homophily (2). While this can increase solidarity within in-groups, it can also induce ingroup bias (i.e., the tendency to favor members of one's own group) and othering processes (i.e., the tendency to view members of out-groups as different, less desirable, or even dangerous). This study examines how ingroup bias and othering processes shape individuals' perceptions of their close confidants' infection status, particularly in relation to emerging disparities in infection rates based on race and partisanship during the COVID-19 pandemic in the United States.

People tend to selectively disclose their health status to others, particularly when it is stigmatized (3). Since the beginning of the pandemic, COVID-19 has been stigmatized. The fact that many cases are asymptomatic has made it easier for people not to disclose their infection status to others. Thus, determining who has coronavirus can be challenging. With limited information, people may have to rely on their general beliefs about other groups. When people face external threats, individuals tend to strengthen their trust and cooperation with in-group members, while othering processes that distinguish "us and them" become more prevalent (4). We hypothesize that during the COVID-19 pandemic, people might perceive their in-group members to be safe, reflecting ingroup bias, and attribute negative characteristics to out-group members, reflecting othering processes.

To examine how people perceive others' coronavirus infection status among their close social ties, we conducted a nationwide online network survey of 36,345 Americans from April 2020 through April 2021, with daily responses of around 100 across 2141 counties across 50 States and Washington DC. These unique characteristics of our data enable us to examine how local and temporal variations in the community-level covid transmissions affects micro-level perception of others' health status. To ensure the quality and representativeness of our sample, we implemented rigorous quality control measures, including filtering out fraudulent responses and conducting survey raking. As a result, our survey makes accurate predictions on weekly vaccination rates (not shown here) and race-specific COVID-19 infection rates that align with CDC benchmarks (see Figure 1). In our survey, we use multiple name generators to capture what people would discuss as "important matters" during the pandemic. Specifically, we asked respondents with whom they discuss personally important matters, political matters, and health matters. Among many follow-up questions on each name they provided, we also asked "How likely do you think that each person has been infected with COVID-19?" We ask participants to estimate the likelihood instead of using a yes or no response because we recognize that they may not know the ground truth. Our results showed that, on average, Americans believed that 13 percent of their confidants were somewhat likely to have been infected with COVID-19, and 7 percent were very likely to have been infected. We created a linear indicator to summarize the likelihood ("very likely" =1, "somewhat likely" = 0.5, and "not likely" = 0). We found that using a binary measure also provided the same results.

According to CDC 's individual level COVID positive cases data from April 2020 to March 2021, Black and Hispanics contracted COVID-19 more than Whites, and Asians were

the least likely to get COVID-19 (see Figure 1). If there is no bias, then we would expect to see that every racial group will report that Hispanic are the most likely to get COVID, which is followed by Black, White, and Asian. However, Figure 2 shows that all racial groups perceived their own ingroup members to be the least likely to contract COVID-19, while they see other groups to be more likely to contract the virus. It is important to note that these perceptions are about family members, friends, and neighbors with whom participants discuss important matters, not about a typical member of each racial category. Therefore, it is crucial to recognize that these othering processes are happening within our close social ties. In addition, we examine whether the same pattern occurs for partisan groups given the highly polarized responses to the pandemic in the United States. Figure 3 shows that that all partisan groups, including those who identify themselves as "something else," perceived their own ingroup members to be the safest, but perceived members whose partisanship are "something else" to be the most likely to contract COVID-19. The "something else" group likely consists of non-voters, non-citizens, or individuals outside of the two-party system. This group is genuinely considered "others" within the US political system, providing clear evidence of othering processes. In a separate analysis, we further show that othering processes are more prevalent in local communities when there were high COVID-19 transmissions.

The COVID-19 pandemic has revealed significant disparities in infection rates across race and partisan groups in the U.S. Research has shown that individuals from marginalized racial and ethnic groups, such as African Americans and Hispanics, are more likely to contract and die from COVID-19 than their white counterparts **(5)**. Moreover, the politicization of pandemic responses has resulted in differences in adherence to recommended behaviors, such as mask-wearing and vaccine intake, based on partisanship **(6)**. These disparities in infection rates and behaviors based on race and partisanship have highlighted the need to examine the mechanisms that contribute to group-level inequality in COVID-19 infections. Our paper shows that the "othering" process that shapes our perception of race and partisan groups in social interactions may induce the disease transmission dynamics that generate health inequality at the macro level. Homogeneity bias can lead people to be more cautious when interacting with individuals from different groups compared to those from their own group. Paradoxically, this can lead to a higher risk of infection within their own group. While taking precautions to protect their in-group members is important, this bias can have harmful consequences due to its tendency to favor the in-group over others.

References

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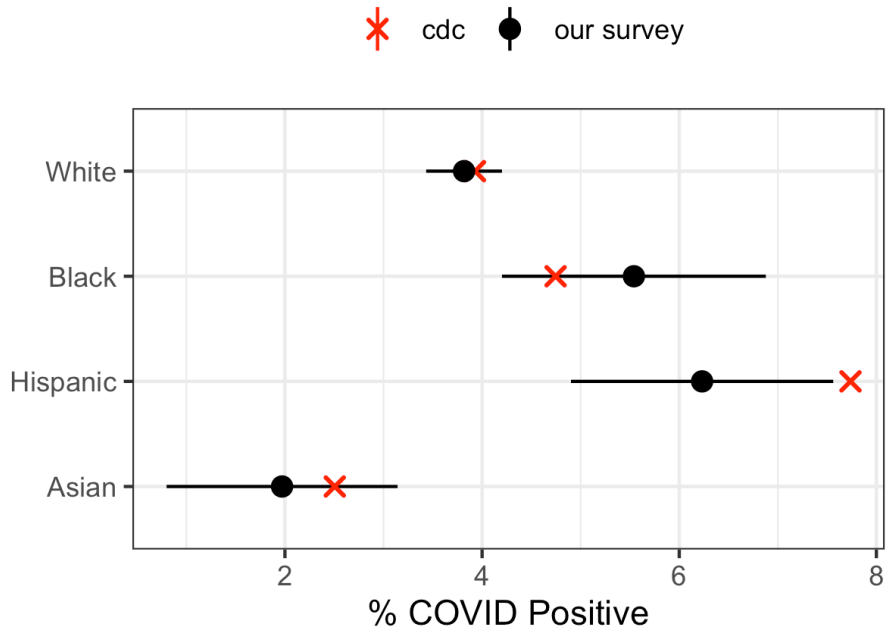
Figure 1. Estimated race-specific COVID-19 infection rates from our survey against the CDC's official COVID infection rates.



Note. Each circle dot represents the estimated COVID-19 vaccination rates with 95% confidence intervals from our survey, adjusted by post-stratified weights derived from survey raking. Each X denotes the COVID-19 positivity rates from CDC.

Figure 2. Perception of others' COVID-19 infection status across racial groups

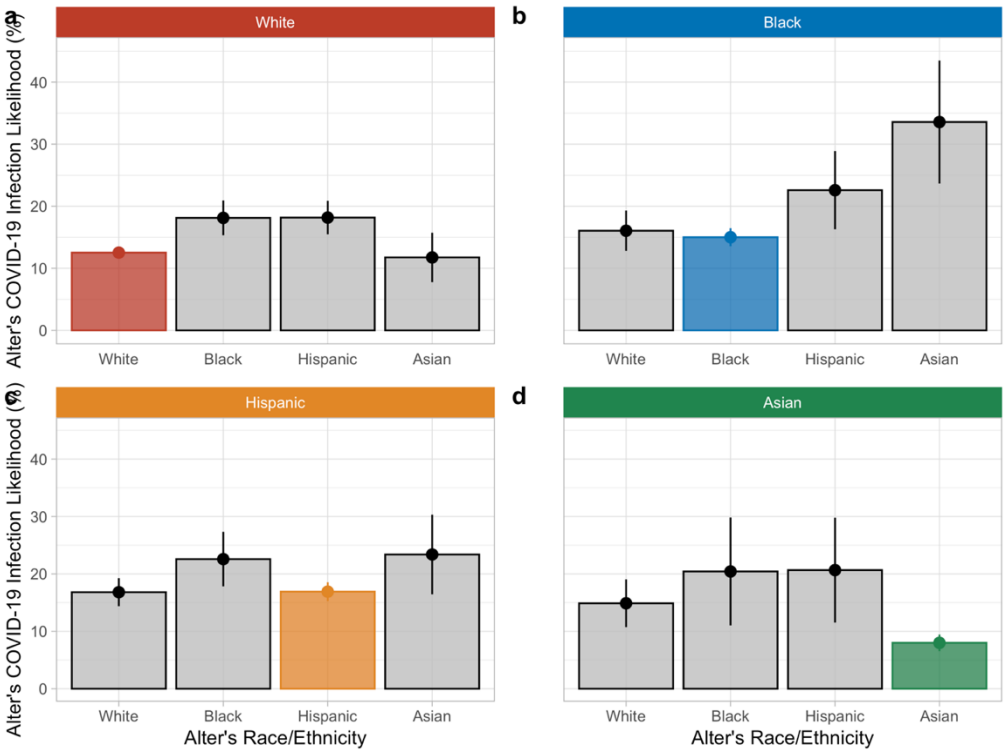


Figure 3. Perception of others' COVID-19 infection status across partisan groups