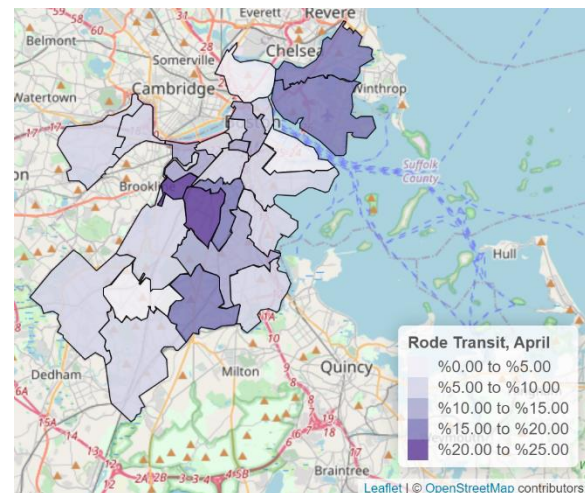


## Inequities in Navigating a Pandemic: Who Rode Public Transit and Who Exercised?

In two data stories we released in the last two days, we used the *Living in Boston During COVID* survey to examine inequities in two activities that are fundamental to nearly all households: work and accessing food. In particular, we examined who was more able to minimize out-of-home activities and thereby limit their potential exposure to infection. Today we are going to turn to two activities that can be crucial parts of people's routines, but have contrasting implications during a pandemic. The first is the use of public transit, which directly exposes individuals to strangers, increasing their risk of infection. The second is exercising and walking outdoors, which is a low-risk activity that can be therapeutic for both physical and mental health. As we will see, these two activities had almost perfectly opposite distributions across communities, with low-income individuals being the predominant users of public transit but rarely exercising or walking outdoors, and high-income individuals exercising or walking outdoors most days of the week but almost never riding public transit.

### Transit

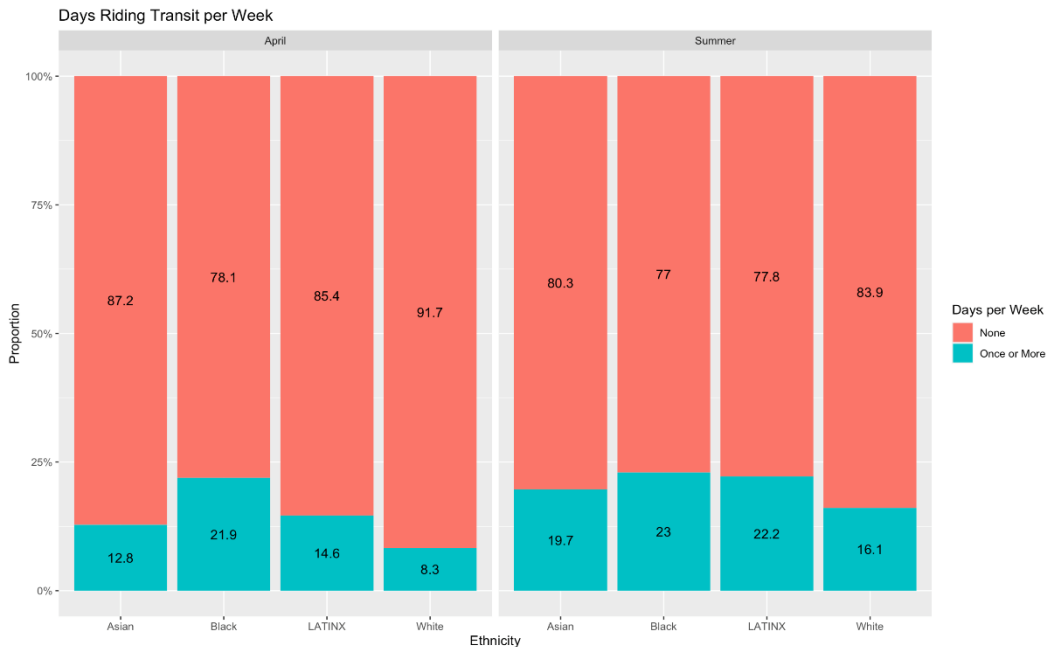
Transit use was greatest in survey respondents from majority-minority neighborhoods in both April and Summer, including parts of Roxbury, Dorchester, and East Boston (see Figure 1). This mirrors reports from the MBTA (and others using their data) that bus service and the Blue Line have seen much higher relative ridership during the pandemic than other routes when compared to pre-COVID ridership. Meanwhile, respondents from more affluent neighborhoods that are heavily served by public transit, such as Downtown and South Boston, had almost zero transit usage. When we look at this in terms of race and income, unsurprisingly, Black and Latinx respondents and those in lower income brackets were more likely to report transit usage. Importantly, the majority of individuals in *all* racial and socioeconomic groups did not ride at all in April, but there were considerably more individuals who reported *any* riding (see Figure 2).



**Figure 1.** Proportion of individuals riding transit at least once a week in April, by neighborhood.

There are two ways that we might interpret these disparities, and it is likely that the truth is at their intersection. First, we have already seen that lower income, minority respondents made more trips for both work and food, which would seemingly make them more likely to have to ride public transit at some time. Second, these individuals were potentially less likely to own their own vehicle and therefore be able to avoid public transit.

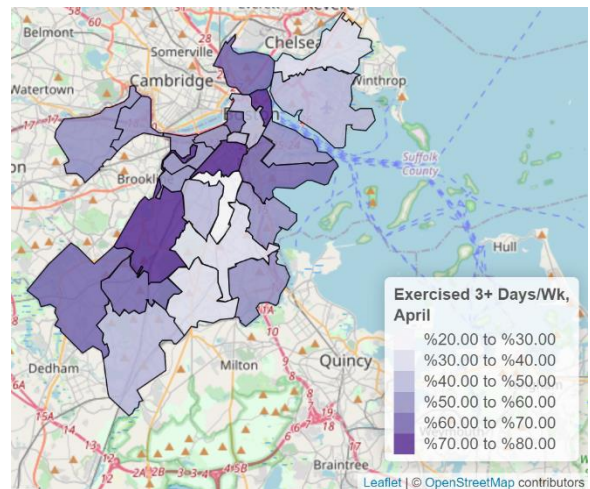
It is the combination of these factors that would best explain this overall disparity as public transit usage was present primarily in neighborhoods that were both lower income and have multiple transit options.



**Figure 2.** Proportion of individuals riding transit by race in April (left panel) and Summer (right panel).

### *Outdoor Exercise and Walking*

The map of outdoor exercise habits in Figure 3 is striking in that it is practically the opposite of the map of transit usage: high-frequency exercisers were concentrated in the high-income neighborhoods ringing the city, from West Roxbury in the southwest, north through Jamaica Plain to Allston-Brighton, and across to Charlestown, North End, and South Boston in the east. Unsurprisingly, these geographic differences translate to ethnic and socioeconomic differences as well. Looking at Figure 4, we see a strong gradient with those in high income brackets exercising and walking outdoors numerous times a week, and nearly half of those in the lowest income brackets never doing so. Those exercising in general



**Figure 3.** Proportion of individuals exercising or walking outdoors 3 or more days per week in April, by neighborhood.



**Figure 4.** Proportion of individuals exercising or walking outdoors different numbers of days per week in April (top panel) and Summer (bottom panel).

increased in the Summer, these differences persisted. In terms of race, White respondents were least likely say they never exercised outdoors (~15% and ~10%, respectively, for White respondents). Meanwhile, the plurality—typically around 40%—of Black, Latinx, and Asian respondents said they never exercised outdoors during both time periods.

As we look at these results, it is worth considering multiple interpretations. First, it could be that the additional trips to work, grocery stores, and the time on public transit might be adding up to diminish the amount of time that less affluent respondents had to exercise. Second, it could be that the lower density and greater number of parks in neighborhoods at the edges of the city means less risk exposure and the ability to socially distance while exercising, leading to more such behavior. Third, it could be that regular exercise was already more a part of the daily routine in these neighborhoods, though we cannot ascertain this without baseline information on behavior before the pandemic. Whatever the specific reason, it points to disparities in the tendency of different groups to engage in an activity that is low-risk and could have positive impacts on physical and mental health during a highly challenging time.

The inequities presented in today’s data story are distinct from those in the previous two; in some ways they may reflect downstream consequences of how often an individual needed to go to work and the grocery store in April and Summer. Each of those activities would require transportation. Not only were low-income individuals and Black and Latinx residents more likely to leave the house to do each of those things more often, they might also be more reliant on public transit, increasing their exposure risk even more.

Meanwhile, the time and space to be able to walk or exercise outdoors might be a luxury limited to those with higher incomes who could work from home and whose neighborhoods are less densely populated. This would suggest that the best pathway forward is to support low-income communities on their other needs, with the hope that such actions would also partially ameliorate these additional disparities.

*The content of this post is drawn from the Living in Boston during COVID survey conducted by the Boston Area Research Initiative, the Center for Survey Research at UMass Boston, and the Boston Public Health Commission. It was funded by the National Science Foundation's Human-Environment and Geographical Sciences (HEGS) program through a grant for rapid-response research (RAPID; [Award #2032384](#)). The results presented here were part of a longer report on "Inequities in Navigating a Pandemic".*