

Can You Social Distance In A Crowded National Park?

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Introduction

Visitation to parks and protected areas is a common COVID-19 coping strategy promoted by both health officials and political leadership. Crowding and congestion within parks has been a perennial problem and the ability to socially distance within them is an unproven assumption. We set out to see if it is possible to be socially distant in a busy national park that has been designed to concentrate use.

Methods

An observational study was conducted in July 2020 just outside the Visitor Center of Arches National Park. Motion sensor cameras were placed to record one-minute videos once a person entered the field of view (Figures 1 & 2). Number of groups, group size, facial coverings and encounters within 6 feet (1.83 meters) of other groups were recorded.

Results

Approximately 61% of the visitors wore masks. Most groups (69%) were able to experience the visitor center with no intergroup encounters. We model the probability of intergroup encounters and find as group size and number of groups increases, the probability of encounters rises (Figure 3). With four groups present, the probability of one or more encounters ranges from 19% to 40% for common group sizes, while if eight groups are present, the probability of one or more encounters increases from 34% to 64% for common group sizes.



Fig. 1. Game camera location (in yellow).



Fig. 2. View from game camera.

Conclusions

Under conditions in which park visitors have the physical space to avoid close encounters with other groups, they are taking advantage of the opportunity. Visitors are minimizing group size, wearing masks, and remaining socially distant. However, encounters increase as the number or the size of the groups increases. In other areas of the parks this ability to avoid encounters may not be as possible. We recommend that park managers continue to appeal for compliance with CDC guidelines, especially the wearing of masks and encouraging visitors to split up into small groups when visiting.

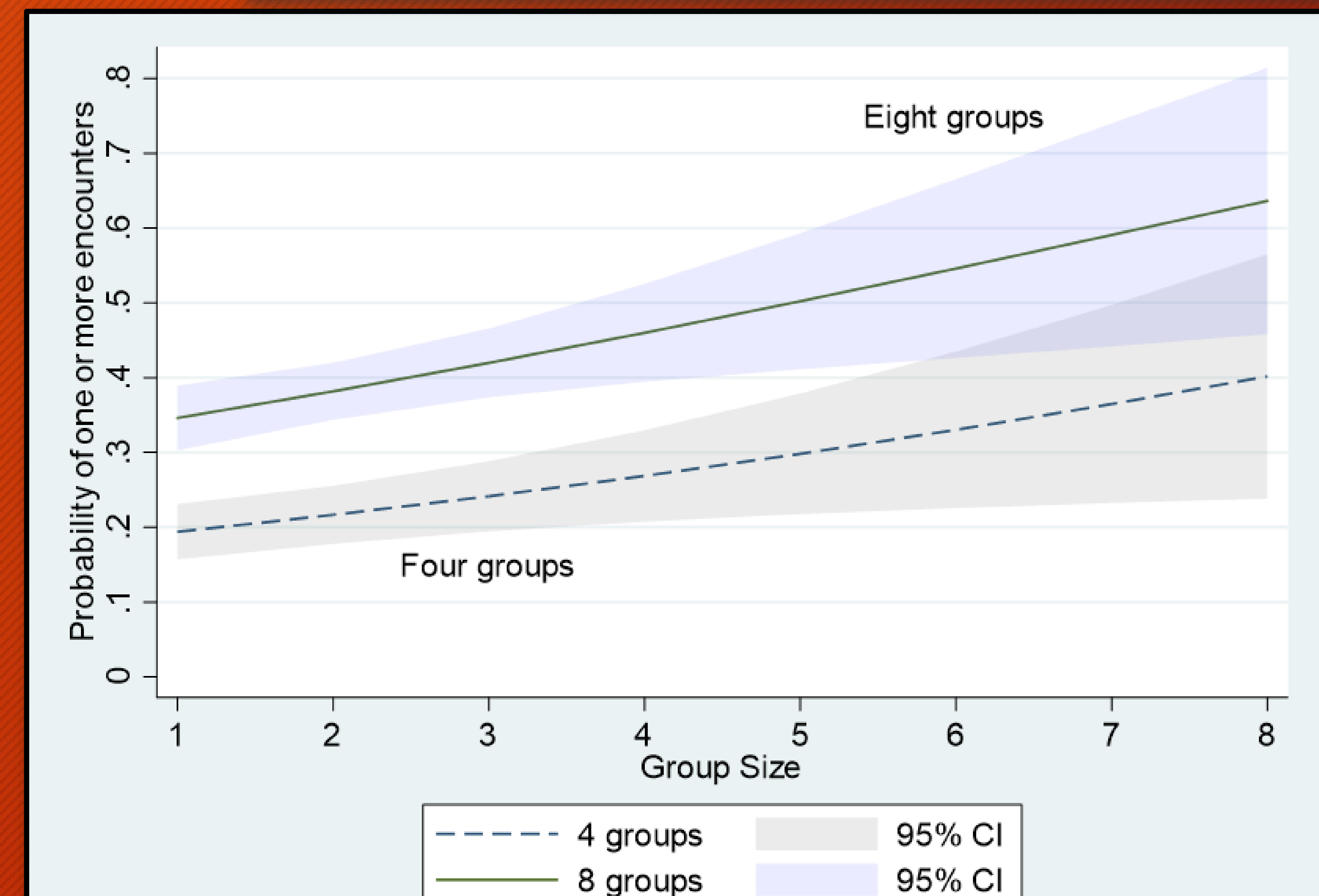


Fig. 3. Probability of an encounter over group size and the number of groups present

References

Miller ZD, Freimund W, Dalenberg D, Vega M (2021) Observing COVID-19 related behaviors in a high visitor use area of Arches National Park. PLoS ONE 16(2): e0247315. <https://doi.org/10.1371/journal.pone.0247315>