

Protection from death by Covid-19 but not in Florida? An important but incorrect conclusion

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In their widely-discussed recent article, J. Wallace, P. Goldsmith-Pinkham, and J. L. Schwartz argue that anti-Covid vaccination has protected against death in Florida and in Ohio during the summer of 2021. I am writing as a philosopher of science with a logical objection that is, if correct, potentially fatal. The authors reason as follows: From May 1 to Dec. 31, 2021, there has been higher excess mortality in Republican-leaning counties than in Democrat-leaning counties of OH and FL. Republican-leaning counties had received lower rates of vaccination; therefore higher vaccination rates have protected Democrat-leaning counties from death by Covid.

This argument, however, is flawed. As the authors observe, “differences in excess death rates between Republican and Democratic voters were primarily seen in voters residing in Ohio, with smaller, and generally nonsignificant, differences in weekly excess death rates between Republican and Democratic voters in Florida” (Wallace et al., 2023). In plainer words, the potential effects observed in Florida were small, sporadic, and inconclusive.

The argument thus gerrymanders two distinct populations and commits the classical logical fallacy of distribution (Aristotle, 1984):

The phenomenon was observed in Ohio.

Therefore the phenomenon was observed in Ohio and Florida.

In the collective sense, the conclusion is correct but unimportant; in the distributive sense, it is important but incorrect.

In the collective sense, the conclusion states simply that the phenomenon was observed in the joint population of Ohio and Florida taken as one. This is compatible with the phenomenon being observed only in Ohio, and not also in Florida. Compare: ‘Hurricanes were observed in the United States.’ This latter statement is correct if hurricanes were observed, e. g., in Florida and in New Jersey, even if they were not also observed in Alaska or in California.

In the distributive sense, however, the conclusion is stronger: it now states that the effect was observed both in Florida and in Ohio taken severally. In this stronger sense, the conclusion is mistaken. The phenomenon was only observed conclusively in Ohio.

Hence the article’s argument appears to rest on a fatal equivocation.

The Florida data in fact seems to outright falsify the article’s thesis: If Covid vaccination protects against death, then it ought to have done so in Florida, but seemingly it has not.

Could there be an overall effect discernible only in the aggregate between OH and FL? No, because the authors are working with population-level data, not with small samples. FL has a population of more than 22,000,000. A signal in FL should have been approximately as audible as in OH.

If vaccination did not protect Democrat-leaning counties in FL, then what protected them in OH? An alternative hypothesis is as follows: FL has had better economic conditions and fewer vaccine mandates than OH. Therefore vaccine mandates have caused more unemployment in OH than in FL. Unemployment is a well-known contributor to excess mortality. This alternative hypothesis correctly predicts excess Republican-county mortality in OH but not in FL.

Before any further conclusions, this alternative hypothesis should be 1) tested against unemployment data from the relevant counties, and 2) compared against the stringency of all applicable vaccine mandates.

References

Aristotle. "Sophistical refutations." In J Barnes (ed.), "Complete Works of Aristotle," Vol. 1: The Revised Oxford Translation. 1984. Princeton University Press.

Wallace J, Goldsmith-Pinkham P, Schwartz JL. "Excess Death Rates for Republican and Democratic Registered Voters in Florida and Ohio During the COVID-19 Pandemic." JAMA Intern Med. Published online July 24, 2023. doi:10.1001/jamainternmed.2023.1154