

Do identical causes have varied effects in different population groups?

May 29 2019



Credit: Francisco Farias Jr/public domain

Public health practitioners often encounter interventions or exposures

whose effects appear to be different in different groups for reasons that are unclear, even though in daily life we know that causes usually act consistently.

In a study led by CUNY SPH Professor Mary Schooling and DPH student Priscilla Lopez, the researchers explain that this situation can be thought of as mediation of the effect of an intervention, or exposure, on outcome by mechanism(s) whose relevance differs between [population groups](#). This re-conceptualization allows for interventions having different effects in [different groups](#) to be unequivocally illustrated diagrammatically, enables better anticipation of the consequences of interventions, and helps public health practitioners design appropriate population-level interventions.

Additionally, this new conceptualization means that interventions having different effects in different groups is transformed from a concept that violates everyday understanding of causes into an insight generating means of identifying causal mediating mechanism(s) whose relevance may differ by population or subpopulation, which can be formally analyzed to enable more effective targeting of interventions.

"This study shows that, in [public health](#), along with knowing what works, we need to know why it works so as to anticipate effects in new settings," Schooling says.

More information: P. Lopez et al. Effect measure modification conceptualized using selection diagrams as medication by mechanisms of varying population-level relevance, *Journal of Clinical Epidemiology* (2019). [DOI: 10.1016/j.jclinepi.2019.05.005](https://doi.org/10.1016/j.jclinepi.2019.05.005)

Provided by The City University of New York

Citation: Do identical causes have varied effects in different population groups? (2019, May 29)
retrieved 19 April 2024 from
<https://medicalxpress.com/news/2019-05-identical-varied-effects-population-groups.html>

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