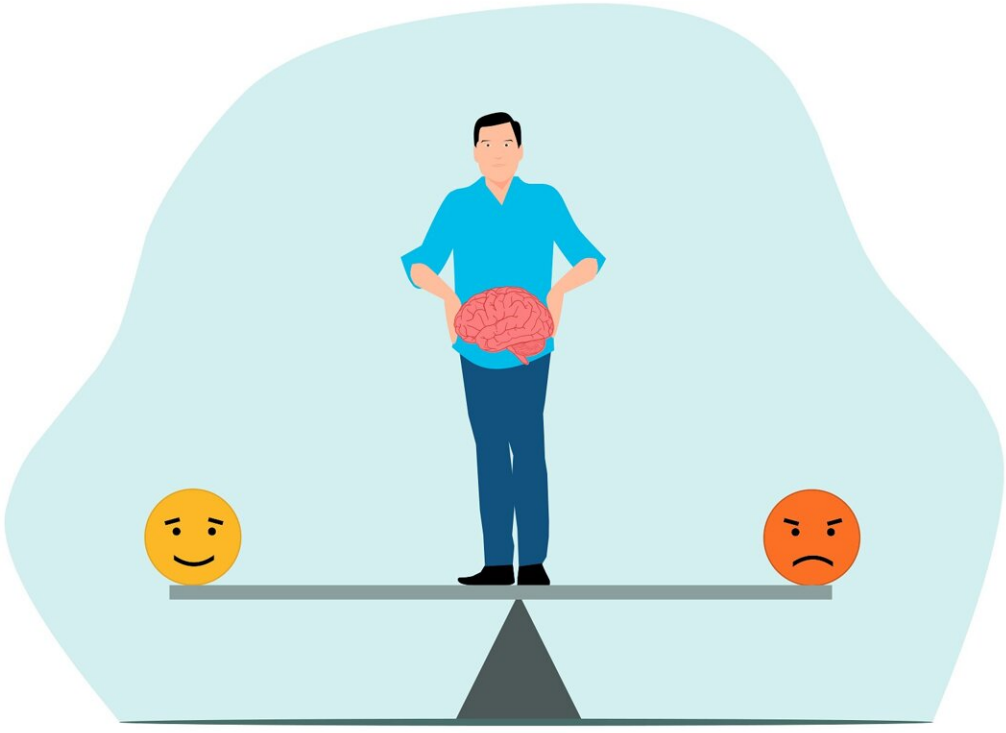
Largest quantitative synthesis to date reveals what predicts human behavior and how to change it

May 3 2024, by Hailey Reissman



Credit: Pixabay/CC0 Public Domain

Pandemics, global warming, and rampant gun violence are all clear

lessons in the need to move large groups of people to change their behavior. When a crisis hits, researchers, policymakers, health officials, and community leaders have to know how best to encourage people to change en masse and quickly.

Each crisis leads to rehashing the same strategies, even those that have not worked in the past, due to the lack of definitive science of what interventions work across the board combined with well intended but erroneous intuitions.

To produce evidence on what determines and changes behavior, Professor Dolores Albarracín and her colleagues from the Social Action Lab at the University of Pennsylvania undertook a review of all of the available meta-analyses—a synthesis of the results from multiple studies—to determine what interventions work best when trying to change people's behavior.

What results is a new classification of predictors of behavior and a novel, empirical model for understanding the different ways to change behavior by targeting either individual or social/structural factors.

A paper published today in *Nature Reviews Psychology* reports that the strategies that people assume will work—like giving people accurate information or trying to change their beliefs—do not. At the same time, others like providing social support and tapping into individuals' behavioral skills and habits as well as removing practical obstacles to behavior (e.g., providing health insurance to encourage health behaviors) can have more sizable impacts.

"Interventions targeting knowledge, general attitudes, beliefs, administrative and legal sanctions, and trustworthiness—these factors researchers and policymakers put so much weight on—are actually quite ineffective," says Albarracín. "They have negligible effects."

Unfortunately, many policies and reports are centered around goals like increasing vaccine confidence (an attitude) or curbing misinformation. Policymakers must look at evidence to determine what factors will return the investment, Albarracín says.

Co-author Javier Granados Samayoa, the Vartan Gregorian Postdoctoral Fellow at the Annenberg Public Policy Center, has noticed researchers' tendency to target knowledge and beliefs when creating behavior change interventions.

"There's something about it that seems so straightforward—you think x and therefore you do y. But what the literature suggests is that there are a lot of intervening processes that have to line up for people to actually act on those beliefs, so it's not that easy," he says.

Targeting human behavior

To change behaviors, intervention researchers focus on the two types of determinants of human behavior: individual and social-structural. Individual determinants encompass personal attributes, beliefs, and experiences unique to each person, while social-structural determinants encompass broader societal influences on people, like laws, norms, socioeconomic status, social support, and institutional policies.

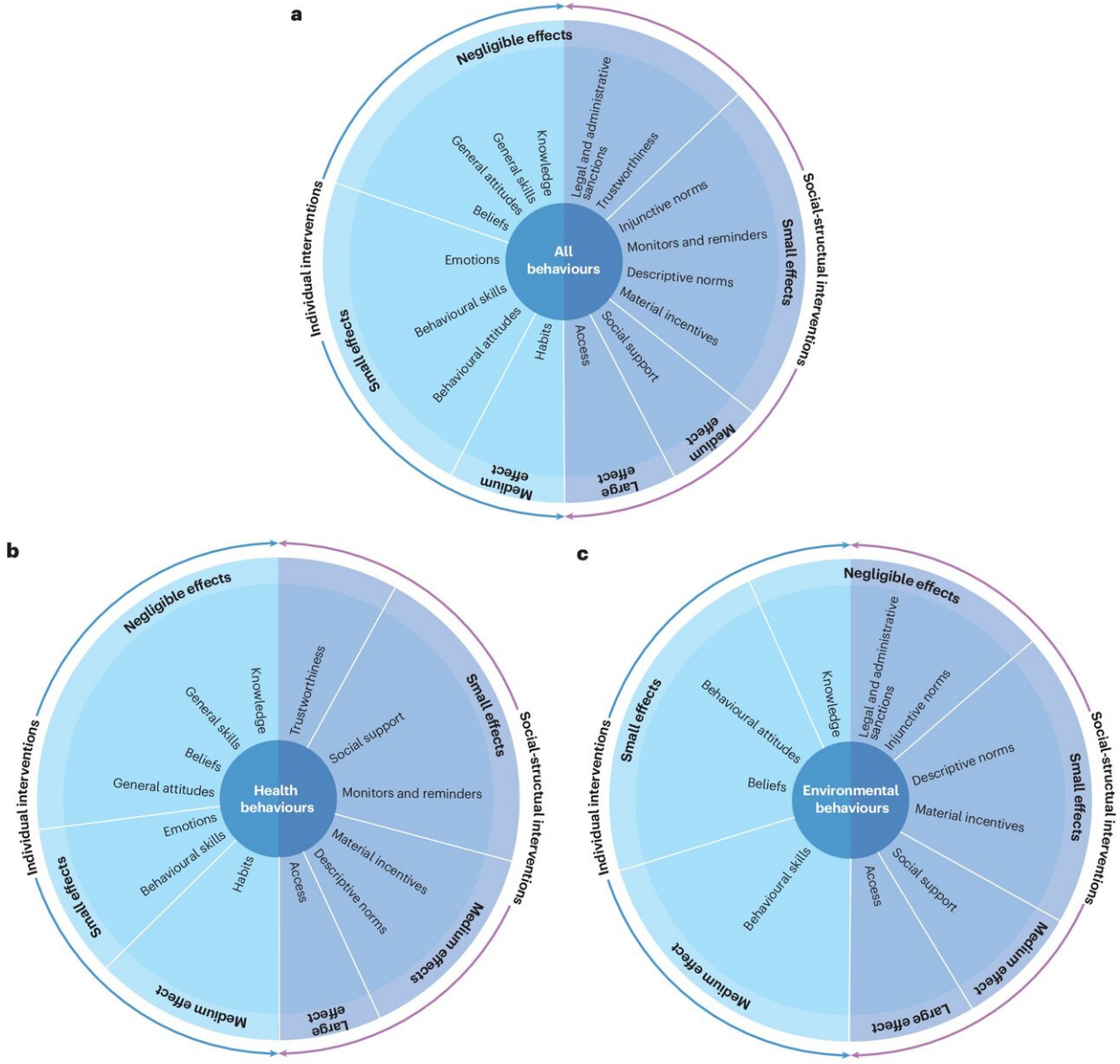
The researchers' review explored meta-analyses of experiments in which specific social-structural determinants or specific individual determinants were tested for their ability to change behavior. For example, a study might test how learning more about vaccination might encourage vaccination (knowledge) or how reductions in health insurance copayment charges might encourage medication adherence (access).

These meta-analyses encompassed eight individual and eight social-

structural determinants—part of the original classification made by the authors.

The results from the research are presented in the following three figures, which pertain to a. all behaviors analyzed, b. only health behaviors, and c. only environmental behaviors.

The figures present interventions with individual targets on the left, and interventions with social/structural targets on the right. For each determinant, the figures show whether the effects has been shown to be negligible, small, medium or large.



Models of behavioral change intervention efficacy. a–c, Conclusions of our synthesis of meta-analyses of behavior change interventions for all behaviors (panel a), health behaviors (panel b) and environmental behaviors (panel c). In all panels, individual targets of change are presented on the left and social-structural targets of change are presented on the right. Credit: *Nature Reviews Psychology* (2024). DOI: 10.1038/s44159-024-00305-0

Individual determinants

The analyses researchers conducted showed that what are often assumed to be the most effective individual determinants to target with interventions were not the most effective. Knowledge (like educating people about the pros of vaccination), general attitudes (like implicit bias training), and general skills (like programs designed to encourage people to stop smoking) had negligible effects on behavior.

What was effective at an individual level was targeting habits (helping people to stop or start a behavior), behavioral attitudes (having people associate certain behaviors as being "good" or "bad"), and behavioral skills (having people learn how to remove obstacles to their behavior).

Social-structural determinants

The researchers also found that what are often assumed to be the most effective social-structural persuasive strategies were not. Legal and administrative sanctions (like requiring people to get vaccinated) and interventions to increase trustworthiness—justice or fairness within an organization or government entity—(like providing channels for voters to voice their concerns) had negligible effects on behavior.

Norms and forms to monitor and incentivize behavior had some effects, albeit small. What was most effective was focusing on targeting access (like providing flu vaccinations at work) or social support (facilitating groups of people who help one another to meet their physical activity goals).

Future use

Granados Samayoa says that knowing which behavior change

interventions work at which levels will be especially crucial in the face of growing health and environmental challenges.

"When faced with massive problems like climate change, policy makers and other leaders have this desire to do something to change people's behavior for the better," says Samayoa.

"Our study provides valuable insights. Our research can inform future interventions and create programs that are actually effective, not just what people assume is effective.

Albarracín is glad policymakers will have this resource now.

"Before this study, analyses of behavior change efforts were limited to one domain, whether that was environmental science or public health. By looking at research across domains, we now have a clearer picture of how to encourage behavior change and make a difference in people's lives," she says.

"Our research provides a map for what might be effective even for behaviors nobody has studied. Just like masking because a critical behavior during the pandemic but we had no research on masking, a broad empirical study of intervention efficacy can guide future efforts for an array of behaviors we have not directly studied but that need to be promoted during a crisis."

More information: Dolores Albarracín et al, Determinants of behaviour and their efficacy as targets of behavioural change interventions, *Nature Reviews Psychology* (2024). DOI: 10.1038/s44159-024-00305-0

Provided by University of Pennsylvania