Psychological science: A building block to public health • Public health: A sandbox for psychological science • Looking ahead

As psychological scientists, we are often reminded of Kurt Lewin’s insightful and enduring quip that “there is nothing so practical as a good theory.” By extension, psychological science holds much promise in attempting to address the myriad of complex public health concerns we now face. Insights from many areas of psychological science have historically contributed to advancing research, program, and policy within a variety of applied health disciplines and in public health more broadly. One can see numerous useful examples in the May/June 2023 issue of the Observer, including the connection between delay discounting and COVID-19 vaccine hesitancy, the gaming of inoculation interventions to stem the influence of misinformation, and the cultural adaptation of laboratory stress inductions such as the Trier Social Stress Test. As global health emergencies occur with greater frequency, psychological scientists (and behavioral scientists more broadly) are needed in government to promote preparedness, responsiveness, and resiliency of health systems and inform reliable interventions to change health behavior. In the U.S. government, psychological science is considered one of the behavioral and social
sciences that make contributions to public health; other disciplines include sociology, anthropology, and neuroscience.

The authors of this article, both trained as experimental social psychologists, now spend their days working in the U.S. government, highly engaged in supporting and implementing the best of psychological science to address public health needs.

We first met when participating in a symposium at the 2022 APS Annual Convention that focused on best approaches to increasing COVID-19 vaccine uptake. Since then, we have been engaged in discussions about the continued challenges and opportunities associated with integrating psychological science into public health, often asking ourselves two main questions:

1. How can psychological science be incorporated to the fullest extent into public health research, programming, and policy?

2. What can the experience of addressing public health issues in the field tell us about how best to integrate individual and population levels of analysis to improve population health?

Our starting point is a presumably uncontroversial observation: Scientific advances, such as the development of new vaccines or treatments (e.g., preexposure prophylaxis to prevent HIV infection), may not have the expected public health impact because of suboptimal uptake. This paradox points to the crucial role of human behavior as a critical variable that is often overlooked but can have an outsized impact on public health outcomes. That observation is especially true of recent public health emergencies such as the Ebola outbreak in West Africa and the global COVID-19 pandemic, where individual and community behavior often influenced the overall trajectory of the outbreaks. Although some public health needs can be addressed by changes to public health systems—like adding fluoride to public water systems and banning toxic substances—the success of many public health efforts are ultimately dependent on human behaviors such as adherence to vaccination, dietary, and physical activity guidelines. In many cases, public health efforts are rendered ineffective because health recommendations to the public can be confusing, burdensome, or otherwise difficult to follow.

What can we do to improve uptake of public health interventions? It can be tempting to follow simple ‘intuition’, which suggests we should rely on more of the same—more education, more messaging, and more information. Yet we know as psychological scientists that intuitions about human behavior are often misguided, and many intuitively appealing approaches to behavior change may not produce desired results. In addition, we are faced with the troubling reality that trust and confidence in public health, institutions, and health authorities are low and declining. This state of affairs highlights an important and yet underappreciated point: the notion that optimal public health efforts are best informed by an intricate knowledge of human behavior—exactly the domain of psychological science. Many of our failures to advance health might be attributed to intra-individual processes such as human attention, memory, cognition, decision-making, emotion, motivation, and behavior. They might also hinge on interpersonal, organizational, and systemic factors such as relationships, social and cultural norms, whether services are accessible, and the presence (or absence) of an enabling policy environment. In
addition, psychological science aspires to address outcomes in multiple contexts and across the lifespan, broadening its impact. Public health can also help to refine and improve psychological theories by introducing real-world mediators and moderators that are less tractable than in traditional lab-based research.

**Psychological science: A building block to public health**

There is a seemingly endless list of domains and public health issues that can benefit from psychological science; we offer a few examples knowing there are many more. Consider how we might promote behaviors such as vaccination and handwashing, which enhance one’s own health and that of others with whom one comes into contact. An answer may originate in our understanding of prosocial behavior, self–other risk perceptions, social norms, and cultural orientations. How might we build a culture in which drug and alcohol abuse are considered counter-normative, and yet one in which individuals using these substances are not stigmatized, which can unwittingly exacerbate use? An answer here may depend on understanding and changing social norms, stigma, emotion dysregulation, and the influence and acceptability of empathy and compassion. Of particular relevance to current public discourse, we need to better understand how misinformation, disinformation, information voids, and cognitive difficulties associated with differentiating between low- and high-quality health information can influence behavior and how to mitigate these effects. Research on social influence, group dynamics, and the processing and internalization of health information may help.

The need for such research is becoming increasingly urgent, as public health emergencies are becoming more widespread (Arnell, 2022). The reality is that better strategies are needed to support an often less-trusting public in navigating quickly changing and complex science, and to encourage adherence to mitigation measures such as lockdowns and travel restrictions that may be unpopular or not seen as outweighing risks and other concerns. Globally, it is estimated that during the Delta variant spread in high-income countries, each quartile increase in COVID-19 vaccination coverage resulted in a 5% reduction in peak case rates and a 4% reduction in peak death rates (Atherstone et al., 2023). Even steeper declines in mortality and morbidity might have been possible given more effective application of strategies to increase vaccine confidence, demand, and uptake that build on our knowledge of social identity, social norms, motivations driving decision-making, and effective strategies to reduce structural barriers and increase access to services. Fortunately, there are historical examples of initially unpopular health and safety practices becoming normative over time in the United States, such as the use of seat belts and bicycle helmets, adoption of smokefree workplaces, and increases in the minimum age required to obtain alcohol and tobacco products (Ash et al., 2014; Chapman et al., 1999; Graitcer et al., 1995; Schneider et al., 2016; Toomey et al., 1996).

In our view as psychological scientists working in the federal government, the role of psychological science in advancing public health could be even stronger given the many opportunities to have an impact. Local, state, and federal public health agencies could consult psychological scientists, giving them more of a “seat at the table” which would leverage their expertise. The potential reasons for suboptimal influence are numerous. In general, disciplinary norms and standards in psychology tend to value fundamental discovery research more than applications of that work in the field, and process evaluation more than impact evaluation. Moreover, addressing public health problems often requires a team-based, interdisciplinary approach, which tends to be different than the more lab-centric approach of
traditional psychological science (although that is changing). The timeline for applying psychological science from data to action is typically not rapid enough to be useful to health authorities, particularly during an emergency (e.g., quick population-level surveys or polls, social listening). In addition, much of psychological science research and practice still operates within high-income countries (vs. low- or middle-income countries), with relatively less emphasis on translation or generalizability to different contexts. As APS Past President Jennifer Eberhardt declared, “much more needs to be done to remake the culture, infrastructure, career opportunities, and reward systems of academia to even make space for bringing the world into our science”. Addressing these socio-contextual issues would facilitate even more disciplinary impact—a golden opportunity to maximize the influence of psychology on public health.

It is also important to consider that psychological scientists may have concerns that their work will be misused or misinterpreted when adapted or taken to scale. Psychological science training does not usually include a focus on implementation science, or navigating an often suboptimal implementation environment, creating a handoff problem when attempting to translate empirical findings into interventions. By incorporating real-world, practical factors into psychological science research, findings can become more relevant and useful for addressing public health challenges.

Public health: A sandbox for psychological science

Psychological science is sometimes critiqued for being too lab-based, irreplicable, and unapplicable to real-world contexts. However, we believe that addressing population health could illuminate important mediators and moderators of predictive effects, and in doing so improve the ecological validity of findings from psychological science. These include organizational, community, and structural factors that influence health outcomes, in addition to factors at the individual level. Research along these lines has the potential for greater public health impact, which can in turn provide more visibility to the field. We have also observed that junior investigators are showing more and more interest in having a real-world impact, and they will likely find careers in psychological science more appealing to the extent that they can have such an impact.

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Psychological scientists are in a good position, in collaboration with others, to design, implement, evaluate, and scale up multilevel and multifactorial interventions that address behavioral determinants at multiple levels. In doing so, they can leverage tools from several areas of psychological science to design and test interventions that change social norms and break through echo chambers and communication siloes, both online and offline. For example, interventions that will effectively increase vaccine confidence, demand, and uptake are likely ones that will consider disease risk perceptions and perceptions of vaccine efficacy and safety, micro and macro social norms, intentions to vaccinate, and accessibility of services. Importantly, there are many reasons to expand the reach of psychological science beyond the potential for making contributions to improving public health. Much research is supported by public interest which encourages a focus on applied research that advances population health. There’s also a corollary benefit to the field, in that doing our research in ecologically valid contexts enriches our theories and offers new hypotheses to be tested. Addressing public health goals also globalizes psychological science even further, allowing us to understand synergies and differences in determinants of health behavior and interventions across global contexts. There is untold potential in collaborating with psychological scientists at universities and governments in low- and middle-income countries; doing so will allow for more cross-fertilization in psychological science and expand application of our work.
Looking ahead

The push toward psychological science having greater public health impact—or what APS Fellow Robert Cialdini has called “full cycle” research—is enjoying increasingly more support. Professional associations such as APS have signaled their interest in various ways. In addition to the May/June issue of the Observer, APS at its 2022 Annual Convention sponsored the aforementioned symposium and a decision-making simulation focused on vaccination. This type of collaboration among federal government agencies, local health authorities, a professional association, and academics represents the type of multi-stakeholder alliance that would be useful to address emerging public health concerns and emergencies. Our home agencies also hire and retain psychological scientists and support programs that utilize psychological science to address public health goals. For example, the National Cancer Institute’s Behavioral Research Program includes a large cadre of psychological scientists on its full-time staff, and the program oversees a portfolio of funding initiatives and grants in a variety of areas such as affective science, stress, decision-making, communication of uncertainty, effects of expectancies, aging, addiction, and behavior change. Psychological science is supported at several institutes and centers across NIH, played a key role in a recent NIH Common Fund initiative on the Science of Behavior Change, and is supported by the NIH Office of Behavioral and Social Sciences Research (which recently hired psychologist Jane Simoni as its new Director). At CDC, social sciences more broadly are increasingly being leveraged to improve public health outcomes for routine health services as well as during public health emergencies.

We encourage greater incorporation of psychological and broader behavioral science into public health decision-making so that behavioral science methods and findings can be leveraged alongside other more ‘traditional’ areas of public health, such as epidemiology or the medical sciences. Psychological scientists working at federal agencies even have a home in a Social and Behavioral Sciences interagency working group, which this fall is publishing a blueprint on how these sciences can benefit many needs across the U.S. government. One effective pipeline to bring more psychological scientists into federal service is to explore fellowships for graduate student and early-career scientists to work within federal agencies. At present, such fellowships for behavioral scientists are limited and could be expanded. Behavioral scientists can also apply to existing fellowships such as the CDC’s Epidemiologist Intelligence Service or National Cancer Institute’s Cancer Prevention Fellowship.

Psychological science has been a major player in addressing high impact societal issues, including public health challenges, from handwashing to vaccine uptake (Brewer et al., 2017; Rothman et al., 2015). We think much more can be done, and we invite our colleagues to consider how their work can help address the tranche of public health issues we are now facing. Doing so will not only increase the chances of achieving greater influence but also enrich the field in numerous ways. Optimizing public health depends a great deal on strong psychological science.

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References


