



# Intellectual humility in public health training, research, and practice

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In November of 2022, the American Public Health Association celebrated its 150th anniversary with an in-person attendance meeting at the Boston Convention Centers. After pandemic-driven lockdowns and remote videoconferencing for many participants and especially for the younger crowds, it was a refreshing and invigorating event. Reasons for celebration of public health achievements were plenty, yet recognition of how much must be done to keep people safe, healthy, and thriving was also loud and clear. The most common presenter's plea was for protecting public trust from erosion and supporting the profession in critical times such as these. The growing power of misinformation amplified by fear, futility, and inequality also topped the list of concerns. In search of an antidote to polarization and confusion, I turned to 'intellectual humility,' a mindset of self-reflection and a guiding principle for our intellectual conduct that recognizes and owns our limitations while pursuing truth and knowledge.

At the conference, the *Journal* celebrated the Best Paper Award presented to a team of Ecuadorian researchers. We invited Bertha Estella, the first author of the selected paper, to share her experience in public health research, training, and practice [1]. For nearly 20 years, the team has been building a strong coalition among academia, the private sector, and governmental organizations to protect citizens from harmful air pollution caused by urban traffic. The team worked with local authorities on establishing air quality monitoring, assessing respiratory health in school children, and informing communities on health risks. The presented study highlighted the value of systematic follow-ups to gage the successes and shortfalls of environmental health policies. These efforts took decades of clinical trials and persuasions with facts and advocacy work. One of the lessons shared by the team is that the fight for effective environmental health policies never stops. As socio-economic conditions and political priorities change so too does support for public health initiatives, and the solutions to complex problems, like worsening urban air quality, must be reevaluated. To keep the policies in place and enforced, the research

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community must constantly educate all stakeholders (physicians, policymakers, and citizens) about the challenges in finding solutions to growing health problems. To sustain progress, both the authorities and the public must recognize different points of view and be part of the solutions.

The ability to recognize the shortcomings in one's own point of view—as a core interpersonal, institutional, and cultural value—is something to strive for. During my career in public health research and professional training, I have noted that such core values are rarely addressed in graduate curricula. I also noted several flaws in the way we teach public health students the main concepts of research. We often focus on teaching how to devise *technical* solutions to complex problems, solutions that are devoid of human response. We train to develop and implement surveys, investigate outbreaks, collect samples, and evaluate interventions. We teach to posit a research question, plan a study, apply a formal statistical test to collected data, and communicate results. We teach to examine an effect of policies, conduct a literature review, perform a content analysis, and compare points of view. Yet, when we ask students to recognize and understand alternative points of view, we rarely ask them to reflect on and admit the limitations of one's knowledge or beliefs.

In implementing interventions, we search for solutions that are cost-effective, goals that are easy to measure and show. We often portray public health tasks as well-defined, finite, and achievable. We implicitly promise instant gratification upon achieving our goals. In reality, many of public health tasks are ill-defined and metrics of success are blurry. As we compare the points of view of involved stakeholders, we often learn that their agendas are convoluted. We typically work under conditions of sparse resources. When we implement policies, even operating with the best intent, we learn that progress could be marginal, and a backlash is quite possible. We rarely ask ourselves and our students to imagine reactions to policies and to think about short- and long-term unintended impacts of recommendations.

Intellectual humility, a type of attentiveness to and owning of intellectual limitations, has recently received increased attention from scholars across many social disciplines [2]. Studies show that intellectually humbler people tend to be more curious, to make more thorough, well-informed decisions, and “more open to cooperating with those whose views differ from their own. These habits of mind could be vital for confronting many of the challenges facing societies today, and beneficial to laypeople, policy makers, and scientists” [2].

Now more than ever, we need to adopt a mindset of intellectual humility to value the intellect of others. The public health agenda is multidisciplinary and requires teamwork and strong partnerships. The humility mindset could help us to recognize a lack of skills in a particular area and to realize that we could overlook weaknesses in our own research designs, proposals, observed facts, and sets of beliefs. Most importantly, this mindset can help all of us to see limitations as part of an iterative learning process and as motivation to gain knowledge in a collaborative and transformative way.

I see the need for bringing intellectual humility to classrooms, research labs, and policy debates through the art and science of constructive feedback, reflection, and targeted actions. In cultivating curiosity and critical thinking, we must recognize the students' motivations and hone their abilities to receive and provide effective



feedback as a core requisite of future leaders. As the students enter the workforce, they bring new technical and social skills and attitudes, crucial for effective knowledge sharing. These students and workforce are our readers, reviewers, and authors. The ability to provide effective and constructive feedback to an author and the author's ability to respond effectively and constructively to comments and suggestions are the keys for a productive dialog among colleagues. Such dialog serves to better inform and enrich the intended audience, convey ideas, gain support, and call for action.

Humility and humbleness are ever-present in public health professional codes of ethics. The Centers for Disease Control and Prevention calls cultural humility the first principle of professional conduct for global health practitioners [3]. Their work addresses global issues of health equity, disparities, and inequities and requires the support of many players. Cultural humility and commitment to community engagement are the foundation for meaningful and ethical partnerships.

Given the *Journal's* global readership, we interpret this principle as a requirement that our authors recognize and acknowledge local partners' contributions that lead to a publication. We expect our authors to strive for accurate and adequate authorship designations. We invite authors to bring various perspectives and points of view. We see a publication as a voice for those whose voices have been obstructed by noise or injustice. We want readers to see their own positions through discussions that authors bring to the *Journal*.

In the era of evidence-based policies, many public health professionals use data to explain complex ideas across academic disciplines, social groups, and players with different perspectives. By applying the concepts of intellectual humility, we could foster effective and ethical use of data-powered tools, minimize the risk of distortion and misperceptions, and create better standards for responsible science communication. Given the *Journal's* multidisciplinary perspectives and interests, we ask authors to avoid technical jargon, clarify terms, and provide definitions and glossaries. We ask authors to strive for scientific credibility and report on uncertainties in estimates, models, and expert opinions. We ask authors to see their articles as conversations with the *Journal's* readers.

'Human-centered' problems, like controlling pandemics, forecasting famine and food crises, and adopting environmental policies, are inevitably complex. Their key features include potentially rapid changes or stubborn stagnancy in peoples' opinions and behaviors that subsequently modify responses to policies. Solutions to complex problems are inherently predictions and contain a great deal of uncertainty. In essence, predictions test our understanding of causal models. Testing predictions, when they turn out to be wrong or right, is a powerful way to foster intellectual humility.

In crises and complex situations, people are disproportionately affected by both the crisis and policies. These effects create a feedback loop that allow the loudest voices to dominate the conversation and demand particular behaviors. In case of a large-scale outbreak, such reactions are reflected in popular and non-popular responses to popular and non-popular policies. Reactions to wearing of facemasks in public places, reactions of employers and employees to mandatory vaccinations, parental decisions to vaccinate their school-aged children, responses of business



owners toward protecting customers and profit are examples of societal reactions. Such reactions to policies designed to address ‘human-centered’ problems reflect reality, actors, and actions. The intellectual humility mindset could help us to create conditions for a productive dialog while developing ‘human-centered’ strategies and reflecting on lessons learned. This attitude could help to build future intelligent knowledge-driven systems and policies that appeal to the *best in humans*, reward the responses we seek, and foster openness and transparency.

With the *Journal’s* mission to adhere to openness and transparency, I see the value of intellectual humility in developing clear guidance for authors and reviewers for defining, describing, and addressing study limitations from various perspectives. Any study, even the most solid and robust one, has flaws. Any study design has weaknesses. Any dataset has limitations with respect to data quality, quantity, completeness, reliability, and credibility. Each author harbors beliefs and motivations. Each study sponsor has an agenda. Each community has its own history, traditions, and common goals. Can we find transparent and transformative ways to create an open dialog for sharing knowledge in the presence of such diversity? Can we find mutually beneficial approaches and settings to expose the limitations and learn from them efficiently and constructively?

In the life sciences, an ultimate purpose is the development of new theories and models to accurately and comprehensively describe, define, or predict governing processes in nature or human society. We don’t call for a change when all works in a predictable and desired way. Public health practice is constantly testing our theories and assumptions on how society and nature work. I tend to believe that a new theory or a model is needed when the current ones lack essential qualities. As we identify deficiencies and understand the limits of current ones, we search for new solutions. In building editorial support, we encourage authors to present study limitations through the lenses of opportunities, to help followers to build on successes achieved, to encourage attempts to improve, to enhance, to master. We ask reviewers and editors to offer to their peers honest, useful, and constructive feedback to help reveal the best in a person and person’s work.

While intellectual humility requires professionals to be deliberately flexible in their thinking and tolerant of ambiguity. Such requirements are quite the opposite of the criteria for judging the merits of work in public health. The social and professional pressure rewards assertiveness and confidence, especially in critical situations. So as part of a push to support humility in public health research, it is necessary to truly change the culture of research and practice and reevaluate what we consider to be important, impactful, and enduring.

We are looking for strategies for public health professionals to codify ethics and intellectual humility as core elements aiming to reflect on our own limitations, to create productive dialogs, and to offer our readers actionable data-driven suggestions. These strategies will create a space to share knowledge, tools, aspirations, and enrich our personal and professional journeys. They will bring so much needed concepts of science-based teamwork, human-centered solutions, and intellectual humility to everyday lexicons.

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Editor-in-Chief.



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