Counterpoint: The Future of Innovative Epidemiology

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In his commentary on innovation in cardiovascular epidemiology, Kuller (1) pleads for a shift from research that is etiologic to that which is preventive and from research that is customary to that which is innovative. The appeal for intervention was similarly made by Claude Lenfant (2), writing in 2003 after 2 decades directing the National Heart, Lung, and Blood Institute. Lenfant described the delayed implementation of established prevention interventions such as prescription of β blockers and antihypertensive medications and weight loss. “The practices,” he said, “no longer require research to demonstrate efficacy and effectiveness; as a practical matter, everything that needs to be known is already known” (2, p. 871). Indeed, what is currently known is that the vast majority of all cardiovascular deaths could be eliminated through measures that have been demonstrated in etiologic studies (3). When is it time for epidemiologists to stop confirming risk factors and to start establishing ways, indeed innovative ways, to intervene?

As Kuller notes (1), more etiologic cardiovascular research, particularly using the most sophisticated characterization measures, always seems warranted. But to get the most progress for our “buck,” to truly move our profession and public health forward, I agree with Kuller that we need to think more offensively and we must think differently.

An important tool in “thinking differently” is reframing. As I noted in an earlier editorial in the Journal, frames are a structure of expectations that we use to interpret new information (4). Normal science relies heavily on frames, that is, on existing theories. Revolutionary innovation, in contrast, typically breaks frames. Epidemiology’s approach to obesity, one of the largest contributors to modern-day cardiovascular disease, is a case in point. Consider a reframing that takes us deep into the realm of prevention and, indeed, policy and moves our field into new territory.

To date, our approach to obesity has been to focus on individual diet and exercise, with a multitude of clinical trials demonstrating that various diets afford limited long-term success. The frame here has been that big people are the problem. One reframing of the issue is that Big Food is the problem, and that it should be addressed similarly to ways that a previous generation of public health experts took aim at Big Tobacco. Clearly the analogy between tobacco and food breaks down insofar as food is necessary for sustenance and tobacco is not. However, the greatest caloric contributors to obesity come from processed high-sugar/high-fat foods—which are produced by Big Food manufacturers (5).

Epidemiologic interventions in attacking Big Food (analogous to ones used to combat Big Tobacco) might first include research on food pricing and its impact on purchasing, with the idea of demonstrating reduced consumption of high-sugar/-fat foods (starting with sugared beverages) through taxation (6). Second, to control Big Tobacco, America instituted a “Fairness Doctrine” which mandated that for every 3 cigarette advertisements airing on television there needed to be an antismoking ad (7). Whether “good food” ads could ameliorate the effect of junk food ads is an empirical question that is open to research. Even better, how about a ban on processed food ads on children’s television, with before-and-after evaluation of change in consumption patterns? Third, an important plank in tobacco control was public education. The Affordable Care Act requires chain restaurants to post nutritional content on their menus. However, almost nothing is known about how to communicate such information in a way that actually changes behavior. There are potentially golden nuggets of understanding in those chicken nuggets.

As Kuller notes (1), funders, who are usually hesitant to back risky new hypotheses, can always feel confident that by amassing grand data repositories, they are empowering future investigators to ultimately “find something.” Personally, I am with Kuller as a believer in the human ability to frame and test ingenious, novel questions. But this means taking the plunge—and sometimes being wrong. It requires a commitment by our profession and our backers to engage in an adventurous quest called imagination.
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REFERENCES