Genetic Factors and Alcoholism

Frank et al. provided a useful synthesis of the cultural and historical roots of drinking problems among American Indians.[1] We agree with the authors that "further research into the origins of modern indigenous people's problems with alcohol would benefit from an interdisciplinary 'determinants of health' approach in which biological influences on alcohol problems are investigated in the context of the cultural, social, and economic forces that have shaped individual and group drinking patterns."[1(p344)] But we were dismayed by the contrast of that statement with the authors' actual conclusions, specifically that "this article supports an argument that has been stated by others—that cultural dimensions of Native American drinking must be considered far more important than the notion that Native American's propensity for heavy and dependent drinking is primarily genetic."[1(p350)] This statement creates polarities, it is premature and oversimplified, and it will prove unhelpful in encouraging integrative research.

The relative importance of causal factors is an empirical question. There are studies in the field, such as the Ten Tribes Study that we are pursuing, that have assessed genetic as well as cultural and historical factors. These endeavors may permit a quantitative answer to the questions of whether a model of cultural, historical, and genetic factors fits the data, and the relative proportion of the variance in drinking problems that is accounted for by each set of predictors. Until such data are available, speculation is premature.

As the authors point out, not all American Indians are alcoholic, and dismissing the contribution of genetic factors is inconsistent with the authors' acknowledgement of individual differences. Genetic factors are particularly important for understanding interindividual differences within populations. Studies on epidemiologically sampled twins of European ancestry have shown that approximately 50% of alcoholism risk is genetic. Molecular studies have yielded 2 confirmed alcoholism vulnerability polymorphisms in East Asians. Thus, it is fair to conclude that genetic factors are an important component of interindividual variation in drinking problems. Even if genetic and environmental factors can be detected in isolation, their roles must be understood within an integrative framework.

Pitting the cultural and historical causes of alcoholism against biological causes may have an unintended impact on the public. Scientists differing with each other over ideological divides make good media stories. As public health practitioners, we have an interest in promoting science literacy, which includes the capacity to appreciate that complex diseases have multiple causes. □

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Reference

1. Frank JW, Moore RS, Ames, GM. Historical and cultural roots of drinking problems among American Indians. *Am J Public Health*. 2000;89: 344–351.