

gees who came to the United States at least had reduced infant mortality relative to those who remained in Vietnam.³ In our comparisons among Vietnamese regions, though limited by small numbers we did observe a suggestion of a lack of decrease in mortality in the areas thought to be most affected by the war.¹ (table 3)

The most optimistic inference from comparing our and Ascherio et al.'s papers is the growth in recognition over the past several decades, of the public health impact of war. To our knowledge, potential war-related effects on infant and child mortality in the Vietnamese population were not addressed at all in the Western literature prior to our report, which thus required a reliance on data far from optimal for that purpose. In contrast, the research community promptly developed and conducted an extensive survey directly focused on the health of infants and children in Iraq. □

David A. Savitz, PhD
Ingrid E. Swenson, DrPH

Requests for reprints should be sent to David A. Savitz, PhD, Department of Epidemiology, School of Public Health, University of North Carolina at Chapel Hill, CB 7400, McGavran-Greenberg Hall, Chapel Hill, NC 27599-7400.

References

1. Savitz DA, Nguyen MT, Swenson IE, Stone EM. Vietnamese infant and childhood mortality in relation to the Vietnam War. *Am J Public Health.* 1993;83:1134-1138.
2. Ascherio A, Chase R, Cote T, et al. Effect of the Gulf War on infant and child mortality in Iraq. *N Engl J Med.* 1992;327:931-936.
3. Davis JM, Goldenring J, McChesney M, Medina A. Pregnancy outcomes of Indochinese refugees, Santa Clara County, California. *Am J Public Health.* 1982;72:742-744. Letters to the Editor

Preventing Adolescent Drug Use: The Effectiveness of Project ALERT

In their account of the long-term effects of the substance-abuse prevention curriculum entitled Project ALERT, Ellickson, Bell, and McGuigan¹ state that their previous evaluation of the program over a 15-month period produced strong evidence for the effectiveness of the social influences approach in reducing the use of cigarettes and marijuana among adolescents. They add that their 15-month evaluation, the results of which were published in

Science in 1990,² revealed that the program was equally effective among both high- and low-risk individuals and curtailed more than "trivial" levels of use. The authors thus explain the absence of long-term effects primarily in terms of a failure to continue the program beyond 1-year booster sessions. This conclusion hinges on the program's being effective in the short term. To what extent is this so?

In assessing the impact of the program on drug use at 3-, 12-, and 15-month follow-up, Ellickson et al. divided the study's sample of adolescents into three risk groups according to baseline use. In the case of marijuana, these groups were marijuana/cigarette nonusers, marijuana nonusers/cigarette users, and marijuana users. For each of these groups, Ellickson et al. presented outcome data pertaining to use ever, in the past month, monthly, or weekly and whether the subject had quit. Two experimental conditions—one in which a teen leader was involved in program delivery and one in which just the health educator delivered the program—were compared with the control condition. This design produced a table containing 90 cells (3 follow-up periods × 3 baseline risk groups × 5 outcome variables × 2 experimental groups). Because not all outcomes were applicable to all baseline risk groups (e.g., baseline nonusers could not quit at follow-up), 20 cells could not be filled, leaving a total of 70 logically possible comparisons (35 "teen leader" vs control and 35 "health educator" vs control). Of these 70 comparisons, only 6 were significant at the $P < .05$ level. Most of these significant effects occurred in the "ever used" category among the baseline marijuana/cigarette nonusers (i.e., they were confined to low-level use among low-risk individuals).

In the case of cigarette use, the sample was again divided into three risk groups according to baseline use: nonusers, experimenters, and users. Outcomes at 3, 12, and 15 months were assessed in terms of use ever, in the past month, monthly, weekly, or daily and whether the individual had quit. This resulted in 86 logically possible comparisons (43 "teen leader" vs control and 43 "health educator" vs control). Of these 86 comparisons, only 6 showed a significant (at $P < .05$) reduction in use by either of the experimental groups. All of these differences occurred among the baseline experimenters. There were 4 additional

significant differences, but these all pertained to greater use by baseline users in the experimental conditions. The program therefore had an adverse influence on those at greatest risk.

The data from the 15-month evaluation of Project ALERT show that its impact was far from substantial and anything but uniform across risk groups, and therefore the failure to find sustained effects at the 6-year follow-up should come as no surprise. Social influence programs target a narrow range of the known risk factors for drug abuse and have extremely variable effects on their intended audience.³⁻⁵ Thus, as Dryfoos notes in her editorial accompanying Ellickson and colleagues' paper, simply increasing the "dosage" of these programs is unlikely to improve their effectiveness, especially among those most vulnerable to drug use.⁶ □

D. M. Gorman, PhD

Requests for reprints should be sent to D. M. Gorman, PhD, Center of Alcohol Studies, Rutgers-The State University of New Jersey, Smithers Hall, Busch Campus, Piscataway, NJ 08855.

References

1. Ellickson PL, Bell RM, McGuigan K. Preventing adolescent drug use: long-term results of a junior high program. *Am J Public Health.* 1993;83:856-861.
2. Ellickson PL, Bell RM. Drug prevention in junior high: a multi-site longitudinal test. *Science.* 1990;247:1299-1305.
3. Gorman DM. Using theory and basic research to target primary prevention programs: recent developments and future prospects. *Alcohol Alcohol.* 1992;27:583-594.
4. Gorman DM. Commentary on prevention. *Ann Rev Addict Res Treat.* 1992;2:505-507.
5. Mason DT, Lusk MW, Gintzler M. Beyond ideology in drug policy: the primary prevention model. *J Drug Iss.* 1992;22:959-976.
6. Dryfoos JG. Preventing substance use: rethinking strategies. *Am J Public Health.* 1993;83:793-795.

Ellickson and Bell Respond

Gorman's critique of our analysis¹ of Project ALERT's results during the junior high years is biased and misleading. In suggesting that little worked, he contrasts the program's 12 "successes" with a total of 156 "logical possibilities." However, 42 of the 156 are phantom cells with too little drug use for meaningful statistical analysis. Twelve successes, although not overwhelming, is four times the number expected by chance. Gorman also misquotes our conclusions. We reported that the program was equally