Anabolic steroid use among male high school seniors [letter]

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To the Editor.—Documenting the prevalence of substance abuse is the first step in developing effective prevention strategies. In this regard, the article by Buckley et al1 made a positive contribution to the control and prevention of steroid use among male high school seniors. This article received considerable publicity for its findings, largely from the authors' suggestion that extrapolation of its survey results indicated that 250 000 to 600 000 male adolescents in this country are presently using anabolic steroids. Of course, both the broadcast and print media chose to emphasize the higher estimate. In reviewing this article, we feel that the ability to generalize their results and the corresponding national prevalence estimates must be questioned because of the manner in which the sample was selected.

The sample of high schools selected for study was restricted to those that employ a certified athletic trainer. Further, it was noted by the authors that only 10% of high schools employ such a professional and, because of this, the sample was not random. They rationalized their selection by indicating that the high schools chosen “do share the characteristics of a large number of schools in the United States”; however, they neglected to acknowledge the nature of these characteristics. It can be reasonably hypothesized that schools that employ these specialists are different in ways that may influence the study’s findings. For example, these schools may place a higher priority on athletic performance and achievement, which could contribute to increased use of anabolic steroids. On the other hand, certified athletic trainers may be more effective in providing education and actually prevent the use of anabolic steroids.

In our opinion, the researchers’ method of selecting their sampling frame introduced the possibility of severe bias and a consequent limitation of generalizability. We feel that the bias yielded results that when extrapolated to all high schools in the United States overestimated the use of anabolic steroids among male high school seniors and unduly influenced the allocation of limited school prevention resources.

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In Reply.—Amsel et al make several observations that further focus the public health implications of the nonmedical use of anabolic steroids. While the extent of needle sharing among anabolic steroid users is unknown, we agree that this behavior could increase the rate of human immunodeficiency virus infection. In fact, we mention this concern in an article that will appear in the Journal of Drug Education.1

Drs Eriksen and Kondo criticize the generalizability of our findings to the entire population of adolescent males. In our study, we made every attempt to consider the characteristics of the sampling process as it relates to its representativeness as well as to the issues of overreporting and underreporting. We acknowledged in our article that the prevalence of a certified athletic trainer was a requisite for a high school to be in the study population introduces a potential bias. However, we contend that this does not represent a severe bias and, on balance, any bias introduced is more likely to be on the side of underreporting. For example, in the states where the use of anabolic steroids is considered high based on anecdotal evidence, we experienced lower participation rates. Also, the premise that schools with athletic trainers may place a higher priority on athletic performance and achievement is, in our opinion, based on a misunderstanding of the role of the athletic trainer in the school athletic environment. Several school administrators mentioned that the presence of the athletic trainer was an indication of their interest in the welfare of the student athlete rather than in a successful athletic record. Finally, the rate of anabolic steroid use established by our study was reasonably comparable to several statewide studies (as referenced in our article) in which the large majority of schools surveyed probably did not have a certified athletic trainer.

Goldberg et al interpreted the nature of our methodology as resulting in an underreporting of anabolic steroid use rather than the overreporting suggested in the letter discussed previously. However, several participating athletic trainers commented that the homeroom testing environment was routinely used for grade- or school-wide testing procedures, including surveys designed to determine alcohol and recreational drug experience. Only one school indicated that the method of administration of the survey was the reason for their refusal to participate in the study; they did not have a homeroom period.

The suggestion for caution regarding generalizability of our findings is appropriate. We view our work as preliminary; this research was the first national study in this area. Our feeling is, however, that our estimates of prevalence of anabolic steroid use represented a lower limit. Clearly, more research is indicated not only on the level of use, but also on interventional strategies and the identification of the long-term health effects.

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