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281158 Accuracy of drinking behavior recall: Comparing late night BAC by breath analysis to estimated BAC from linked survey responses in a residential college environment

Tuesday, November 5, 2013

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Assessing risk due to alcohol consumption in collegiate populations is often achieved using measures of the frequency of use and the quantity of alcohol typically consumed (number of drinks). Since body weight, gender, and the time spent consuming alcohol all influence the degree of intoxication, a better measure of risk rather than number of drinks is an individual's peak blood alcohol concentration (peak BAC). BAC can be measured in field tests directly using breath test instruments or estimated from survey data responses reporting the quantity of alcohol consumed, time of consumption, personal weight and height, and gender. 2,758 random anonymous double-blind late night breath tests have been conducted along with an anonymous but individual case linked survey of alcohol use just inside the entrance to residence halls in a collegiate environment between spring 2003 and fall 2012. Several methods for computing eBAC values have been evaluated by comparing their predictions to corresponding measured BAC values. An assessment of the accuracy of drinking behavior recall has also been conducted as a function of intoxication level. Finally, mathematical models have been developed to determine the eBAC during the pre-absorptive state and to assess the time after cessation of drinking required on average to reach full absorption and peak BAC for this college population. Results will inform survey researchers on the accuracy of personal alcohol use recall and on the relative accuracy of computational methods for eBAC determination.

Learning Areas:

- Basic medical science applied in public health
- Conduct evaluation related to programs, research, and other areas of practice
- Public health or related research
- Social and behavioral sciences

Learning Objectives:

Describe sources of error in alcohol breath analysis (BAC) measurements. Describe methods of blood alcohol concentration estimation (eBAC) from survey data. Describe patterns of error in reporting personal drinking behavior. Discuss accuracy of reporting drinking behavior late at night in a collegiate environment.

Keywords: Alcohol Use, College Students

Presenting author's disclosure statement:

Qualified on the content I am responsible for because: I am co-director of the HWS Alcohol Education Project and have been PI on multiple federally funded grants focusing on implementation and assessment of alcohol abuse prevention in collegiate environments. I am director of a multi-year research program of double-blind late night blood alcohol assessment by breath analysis in a collegiate environment. I am author of several publications in this area.

Any relevant financial relationships? No

I agree to comply with the American Public Health Association Conflict of Interest and Commercial Support Guidelines, and to disclose to the participants any off-label or experimental uses of a commercial product or service discussed in my presentation.

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