Results from a Study Measuring Late Night Blood Alcohol Levels in a Residential College

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Abstract:

More than 1,400 random late-night blood alcohol tests with matched surveys have been conducted every night of the week spanning every month of the school year. 61% of students sampled had a BAC level of 0.00 g/dL and 76% were at 0.05g/dL or less. Very strong social norms messages can be developed from these data to bolster the credibility of self-report based media campaigns. Protocols for data collection, sample BAC distributions broken down by gender and school night/weekend night, accuracy of perceived BAC levels by students, and an assessment of the agreement of measured BAC levels with estimated BAC levels from self report survey data with will be presented.

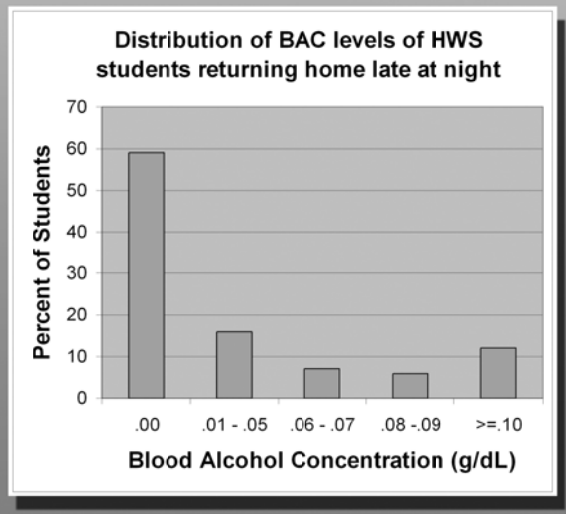
Key Points of Presentation:

1. *Importance of Conducting a Blood Alcohol Concentration (BAC) Survey.* Results from breathalyzer measurements provide another independent data source for social norms messages beyond self-report surveys. By reporting data that comes from biological measurement you can bolster the credibility of your social norms messages that come from self-report data. Sample social norms posters that have been displayed across campus at HWS will be presented.
2. *Protocol for Collecting Random, Anonymous, and Blind BAC Data.* Over 1,400 random student breath measurements have been conducted every night of the week spanning every month of the school year as students return home to residence halls late at night (11pm to 3am). Instruments were purchased that store the BAC result internally while displaying a sample number externally. Neither subjects nor researchers know the BAC at the time of the test. A brief two-page survey is also administered to subjects at the time of the breath test. Procedures for ensuring researcher and subject safety that optimizes participation rates will be presented as well as a description of important campus constituencies that need to be aware of and in support of this work.
3. *BAC Distribution Patterns for a College Population.* 59% of students sampled arrive with a BAC of 0. 75% have a BAC of 0.05g/dL or less. Patterns of distribution for school nights and week end nights will be presented along with gender breakdowns. Results show overwhelming majorities engaging in light to no alcohol consumption.
4. *Assessment of BAC Estimation Methods.* Several computational methods for estimating BAC levels have been reported in the literature. These methods have been used to compute BAC levels from the survey data collected at the time of breathalyzer testing. Results will be presented on the agreement between estimated BAC levels and measured BAC levels.
5. *Cost-Efficient Strategies of Conducting a BAC Survey in a College Setting.* Hiring and paying researchers to conduct these time-intensive surveys can be very expensive. However, at HWS all of this research was conducted as part of the independent study and honors research projects of undergraduate students. Educational budgets paid for all of the equipment needed to conduct this research. Through our efforts on our campus to infuse research on alcohol use and abuse into the curriculum we were able to collect all of this data at no additional cost to the institution.

Sample Blood Alcohol Concentration Social Norms Posters are shown on the following pages

75% of HWS Students Blew a 0.05 or lower BAC Returning Home Late at Night

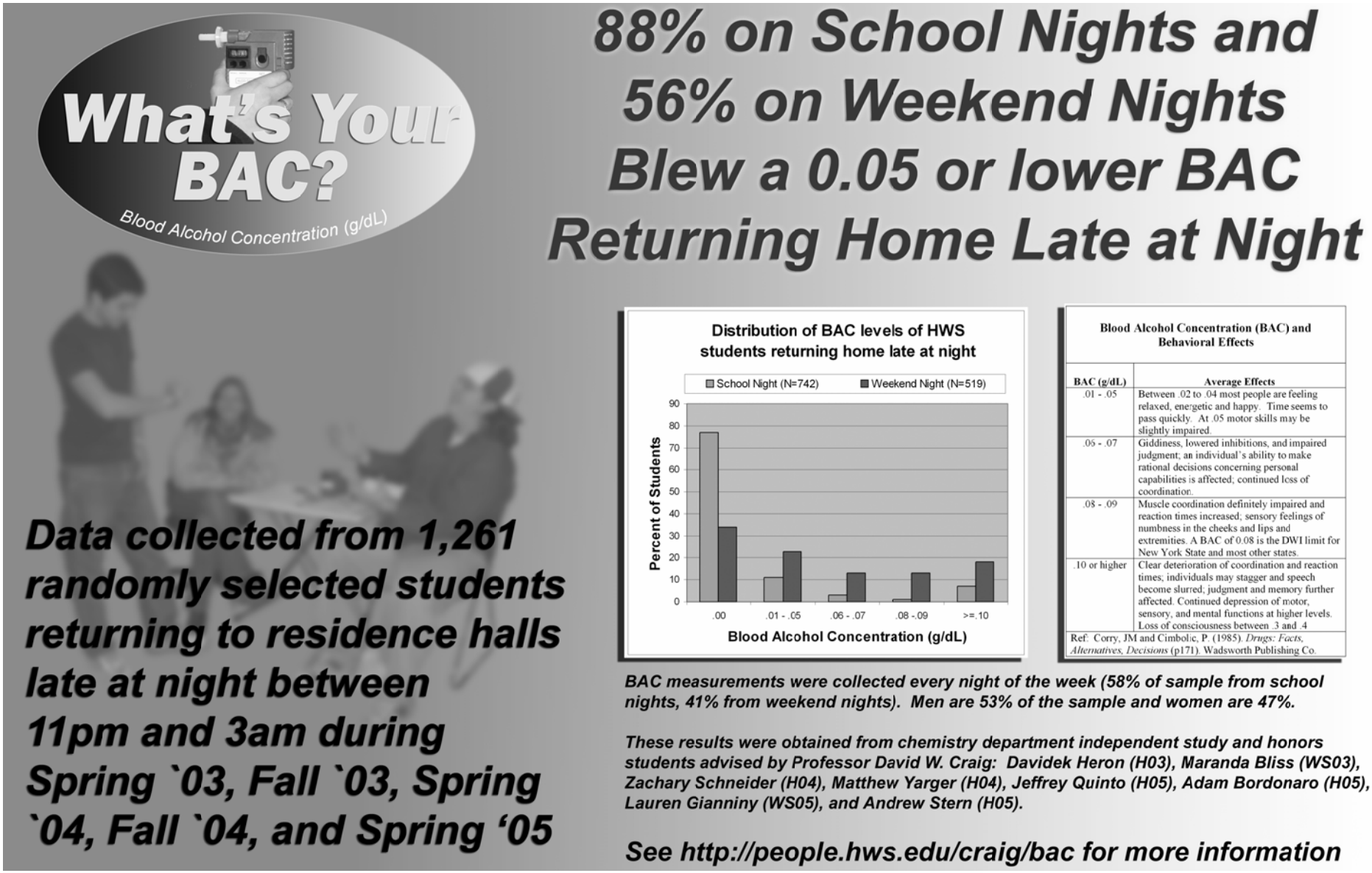
Data collected from 1,261 randomly selected students returning to residence halls late at night between 11pm and 3am during Spring `03, Fall `03, Spring `04, Fall `04, and Spring '05



BAC measurements were collected every night of the week (59% of sample from school nights, 41% from weekend nights). Men are 53% of the sample and women are 47% of the sample.

These results were obtained from chemistry department independent study and honors students advised by Professor David W. Craig: Davidek Heron (H03), Maranda Bliss (WS03), Zachary Schneider (H04), Matthew Yarger (H04), Jeffrey Quinto (H05), Adam Bordonaro (H05), Lauren Gianniny (WS05), and Andrew Stern (H05).

See http://people.hws.edu/craig/bac for more information



88% on School Nights and 56% on Weekend Nights Blew a 0.05 or lower BAC Returning Home Late at Night

Blood Alcohol Concentration (BAC) and Behavioral Effects

BAC (g/dL)	Average Effects
.01 - .05	Between .02 to .04 most people are feeling relaxed, energetic and happy. Time seems to pass quickly. At .05 motor skills may be slightly impaired.
.05 - .07	Giddiness, lowered inhibitions, and impaired judgment; an individual's ability to make rational decisions concerning personal capabilities is affected; continued loss of coordination.
.08 - .09	Muscle coordination definitely impaired and reaction times increased; sensory feelings of numbness in the cheeks and lips and extremities. A BAC of 0.08 is the DWI limit for New York State and most other states.
.10 or higher	Clear deterioration of coordination and reaction times; individuals may stagger and speech become slurred; judgment and memory further affected. Continued depression of motor, sensory, and mental functions at higher levels. Loss of consciousness between .3 and .4

Ref: Corry, JM and Cimbolic, P. (1985). *Drugs: Facts, Alternatives, Decisions* (p171). Wadsworth Publishing Co.

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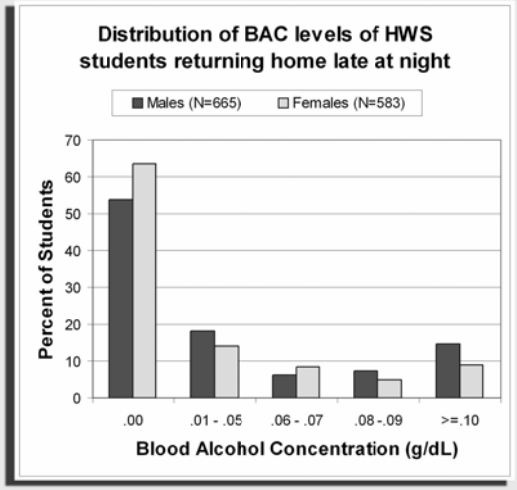
72% of Males and 78% of Females Blew a 0.05 or lower BAC Returning Home Late at Night



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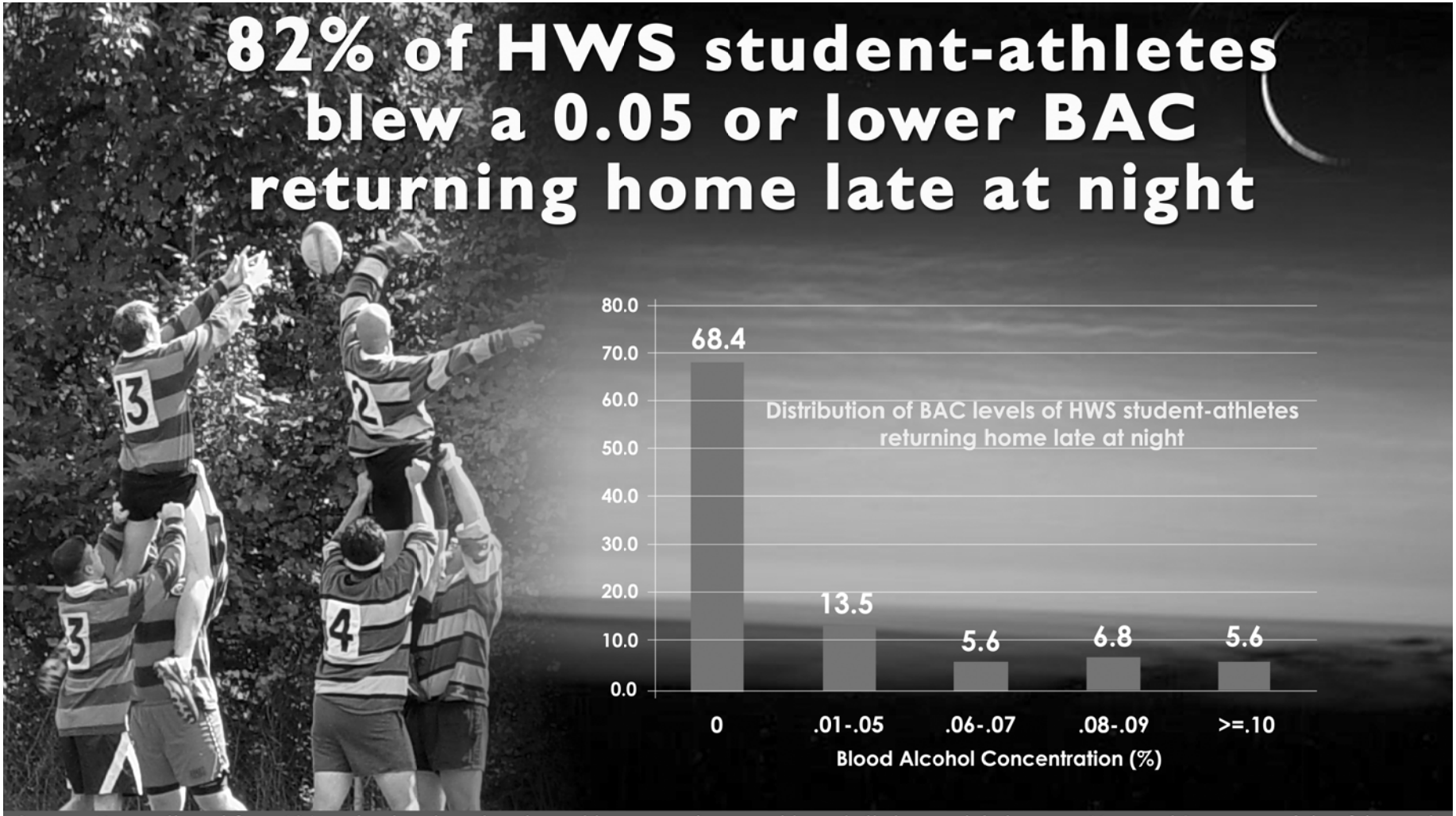

Source: Data collected from 194 randomly selected student-athletes returning to residence halls late at night between 11pm and 3am every night of the week during Fall '04, Spring '05, and Fall '05.

These results were obtained from chemistry department independent study and honors students advised by Professor David W. Craig: Jeffrey Quinto (H05), Lauren Gianniny (WS05), Andrew Stern (H05), Adam Bordonaro (H06), John Bowie (H06), Patrick O'Brien-Gorman (H06), Sam Breier (H06), Alana Braren (WS06), and Lia Blue (WS06)