

## Studying College Alcohol Use: Widening the Lens, Sharpening the Focus\*

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**ABSTRACT.** *Objective:* The study was designed to assess current trends in studying, and emerging approaches to furthering understanding of, college drinking. *Method:* A literature review was conducted of findings and methods highlighting conceptual and methodological issues that need to be addressed. *Results:* Most studies address clinical, developmental and psychological variables and are conducted at single points in time on single campuses. Factors affecting college alcohol use and

methods of studying them are discussed. *Conclusions:* Most current studies of college drinking do not address the influence of the college and its alcohol environment. Our understanding of college drinking can be improved by expanding the scope of issues studied and choosing appropriate research designs. (*J. Stud. Alcohol*, Supplement No. 14: 14-22, 2002)

PERHAPS NO topic in alcohol research has been more intensively studied and widely discussed in the past decade as college student alcohol use and associated problems. A bibliographical search using the term *college* turned up more than 2,200 references in the National Institute on Alcohol Abuse and Alcoholism ETOH database. The hundreds of studies share more than a common topic. Most share a common point of view and general approach. The methods used by researchers very powerfully shape the messages that come from the research literature. Much of the literature has been shaped by assumptions drawn from the study of individual alcohol dependence and individual alcohol-related problems, usually at a single point in time and often just at one institution. Although the literature has succeeded in improving the understanding of some of the microdynamics of college drinking, it largely neglects the broader economic, political and organizational factors. This article calls attention to issues that will shape research about college drinking in the coming years. It is our belief that the literature needs to move away from single campus studies of individuals with alcohol-related problems toward multiple campus studies of the broader factors that shape college student drinking behavior. Questions about complex sampling designs, measurement of broader environments and issues, longitudinal designs and those done at multiple points in time and statistical analyses of causal processes will all come to the fore, and so are given special attention here.

To view college drinking more clearly, we argue for widening the lens and sharpening the focus of research.

It is humbling for contemporary researchers to revisit the pioneering research of Straus and Bacon, published in 1953 as *Drinking in College*. Written almost a half century ago, it stands as a remarkable contribution that is difficult to match. It is equally humbling to realize that college drinking poses as serious a problem, perhaps even more serious a problem, to us today as it did 50 years ago (Biden, 2000; Robert Wood Johnson Foundation, 2001). But it is also important to note how much progress has been made in the research methodologies available today.

Drinking behavior is complex, and there is a need to broaden the range of issues studied, particularly extending analysis to the economic, political and ecological factors that have thus far received far less study than the psychosocial issues. Such factors, listed in Figure 1, include the alcohol environment on campus and in the surrounding community. One would hardly know from current research findings that many colleges are surrounded by a ring of bars and other alcohol outlets, or that special promotions and low-price specials are constantly advertised on and off campus. Other key variables in Figure 1 include centers of drinking on campus, fraternities and sororities, as well as intercollegiate athletics (see also National Institute on Alcohol Abuse and Alcoholism, 1997, p. 310).

Contrasting the variables studied in the current college literature against this list of variables reinforces the need to reshape future research efforts. Our knowledge would be greatly enriched if this broadened focus shaped the next generation of research. We need to examine those factors unique to college populations so that we can better under-

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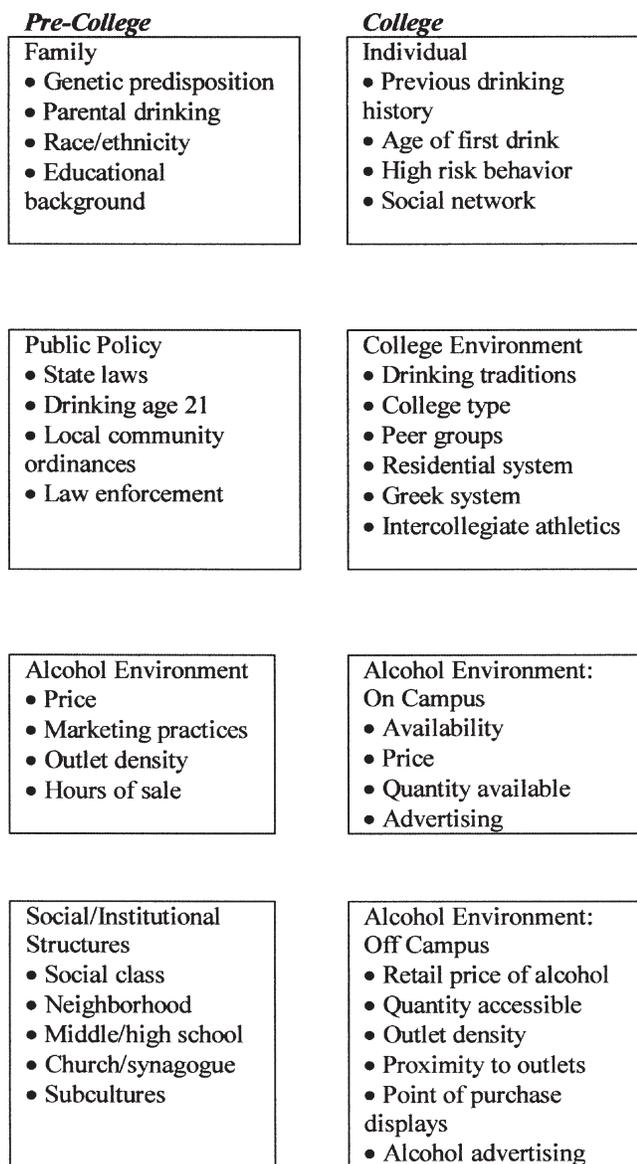


FIGURE 1. Factors affecting college drinking

stand why college students seem to be at higher risk of heavy episodic drinking than their peers who do not attend college.

### Issues in Research about College Drinking

*Types of colleges and universities.* Colleges and universities vary considerably, and researchers and administrators in higher education make use of a standard scheme for capturing the basic institutional types. The Carnegie Foundation for the Advancement of Teaching has produced several editions of such a scheme. The Carnegie categories have been used by others, such as the widely used *Higher Education Directory* (Rodenhouse, 2001) and *America's*

*Best Colleges* (2001), which has adapted the Carnegie schemes in its frequent (and controversial) rankings. The Carnegie categories are Doctoral/Research Universities—Extensive and Intensive; Master's Colleges and Universities I and II; Baccalaureate Colleges—Liberal Arts and General; Baccalaureate/Associates Colleges; Associates Colleges; Specialized Institutions; and Tribal Colleges and Universities. Of the nearly 4,000 institutions in existence, less than one-third are the types usually represented in the college alcohol-related literature.

The existence of such a varied assortment of colleges should alert researchers to the importance of clearly specifying what type of institution is included in the study. Other institutional categories may be crucial to particular studies. For example, Dowdall et al. (1998) reported important differences in drinking behavior between those women who attend women's colleges and those who attend coeducational colleges. Similarly, identifying public or private historically black colleges and universities (HBCUs) is of great importance in understanding the role of race in higher education. Other categorizations emphasize the organizational diversity of contemporary higher education. Given the importance of religion as a correlate of alcohol use (Wechsler et al., 1995a), researchers might want to assess the religious affiliation of institutions (Rodenhouse, 2001). Another particularly critical issue concerns the differences among residential and commuter institutions, as well as the large number of institutions that matriculate both types of students.

*Colleges and universities as organizations.* The study of college drinking would be strengthened with more attention to the changing organizational scene in higher education. As the research university, comprehensive university and community college replace the undergraduate liberal arts college as centers of higher education, new organizational models, in which "student life" recedes as the center of attention, come to the fore. College drinking research needs to link with a more complex organizational understanding of higher education, including how going to college influences student behavior (Astin, 1993; Pascarella and Terenzini, 1991). Sampling of the entire diversity of organization forms becomes an imperative. Attention to how students select specific colleges should be increased, along with a better understanding of how their precollege experience shapes college life.

Another issue that needs to be explored is the community and state in which the college is located. Location raises the issues of availability of alcohol, price and marketing, as well as local drinking traditions. Localities also enact and/or enforce ordinances controlling the sale of alcohol as well as laws concerning the behavior of persons under its influence.

Colleges have rich histories of traditions and customs, some of which focus on the use of alcohol (Horowitz, 1987).

The past controls or at least influences the present, indirectly through such traditions and customs and more directly through the role of the college's alumni, who may exert powerful influence over alcohol use on or near campus.

*Sampling of colleges and students.* Decisions about the population to be studied and sampling are critical. In college alcohol studies, particularly critical decisions concern whether the college students under study are of traditional college age or are older, whether they attend 4-year colleges and universities or the full range of higher education institutions and whether they are full-time or part-time students.

Because there are almost 4,000 institutions and more than 14 million students in higher education, some form of sampling almost always is used by researchers. In many studies, individual students are sampled, although some researchers sample organizations or behaviors. It is difficult to overestimate the importance of random sampling in attempting to learn about large populations, and it has become virtually a requirement of descriptive studies of college student behavior.

Much of what is known about college drinking has been gathered using convenience samples at single colleges. Because drinking behavior varies across students and across colleges, however, generalizing from these types of studies is problematic. This is particularly true in research that seeks to generate point estimates for specific outcomes, such as establishing what percentage of students engage in problematic or harmful alcohol-related behaviors. National studies (including those of college students) usually employ multistage probability sampling designs, in which probability samples are first taken at the institutional level followed by probability sampling of students at those institutions selected in the first stage. These designs usually require specialized schemes of statistical weighting to take into account the fact that several different sampling stages make up the process. Multistage samples also raise the challenge of taking into account the hierarchical character of the resulting sample, because students at the same college share some important characteristics.

Sampling students must take into account their growing diversity. American higher education has never been more diverse in this respect, yet we do not understand very well how racial and ethnic diversity shapes drinking behavior. Wechsler et al. (1994, 1998, 2000b) reported significant differences, with black men and especially black women reporting significantly lower rates of heavy episodic drinking than their peers. As American race relations evolve, survey research items that force individuals to identify only one racial or ethnic identity seem overly simplistic; current federal planning for understanding race and ethnicity allows individuals to report a more complex pattern. Data from the 2000 U.S. Census will shape discussion of this issue.

Equally important to the selection of students is the selection of colleges and universities for study. Single college studies are particularly problematic, in the light of the Harvard School of Public Health College Alcohol Study finding that rates of heavy episodic drinking at 140 colleges ranged from 1% to 70% of students in 1993, with even more variation in 1997 and 1999 (Wechsler et al., 1994, 1998, 2000b). In national multicollge studies, the selection of colleges is optimally based on randomized or representative sampling, rather than less expensive but ultimately unsatisfactory opportunistic strategies.

Although representativeness is of major importance in sample selection, size also matters. Scientifically valid samples of sufficient size to detect small to medium-sized effects are of great importance (Cohen, 1992). It is likely that the complex processes in college drinking are best understood as a large set of many factors, each with relatively small effects. Research about interventions might also be guided by similar assumptions: A relatively large number of countermeasures, no one of which has a large effect, may turn out to be useful in reducing heavy episodic drinking and associated problems (Ross, 1992).

*Longitudinal designs.* Much of the literature about college student alcohol use is based on observations made at a single point in time, such as the pioneering research of Straus and Bacon (1953) mentioned earlier. Longitudinal designs allow researchers to study how change takes place over time (Cook and Campbell, 1979). Trend, cohort and panel designs shed light on change over time, although questions of cost and practicality once again limit researcher choice.

Using retrospective questions in single-shot cross-sectional surveys can help to shed light on change over time, although it is difficult to pose questions about complex behavior (such as alcohol consumption) for distant past time periods in more than general terms. Although there are few longitudinal studies of college drinking, they shed much light on patterns of change, such as the heightened risk of alcohol-related problems in middle age associated with much earlier college alcohol-related problems (Vaillant, 1996), or whether fraternity and sorority members continue their heavy drinking after leaving college (Sher et al., 2001).

Although longitudinal samples are valuable, they also have problems of sample attrition over the time period under study. Attrition may occur at two stages: first, in the original sample, when students may hesitate to enroll in a study that stretches into the future; and second, when students drop out of the later stages of follow-up.

*Validity and reliability of self-reports.* Much research about college alcohol-related issues has relied on self-reports about a student's substance use and other behavior. A substantial body of empirical research suggests that self-reports by adolescents about alcohol, tobacco and illicit

drug use can, under the right circumstances, yield valid and reliable measures.

Can the self-report data be corroborated by a known outside measure (e.g., chemical tests or alcohol sales data)? Freier et al. (1991) validated self-reported tobacco use by testing saliva samples. They concluded that "adolescents report truthfully about their tobacco use when proper data collection procedures are followed" (p. 25). Other investigators (Cooper et al., 1981; Kupitz et al., 1979; Rachal et al., 1980) have generally confirmed the validity of self-reports. Midanik (1988) reviewed a large number of studies that attempted to validate self-report data by using collateral reports of alcohol use (i.e., from friends, spouses, employers), official records (arrests, hospitalizations), alcohol sales data and observational data. She concluded that although most validation studies indicate that self-reports are basically valid, variation does exist, and certain forms yield more validity. For example, reports of recent consumption are more easily validated than questions about longer term patterns of use.

Turning to the question of construct validity, does the self-report of alcohol use make sense in relation to other responses of the individual in the way theories of adolescent behavior or development predict? Johnston (1973), Kandel (1975) and Jessor and Jessor (1977) developed theoretical models into which self-report findings fit.

Are self-reports consistent over time? Bachman et al. (1984) analyzed reliability and stability of drug use from longitudinal data in the Monitoring the Future Project and found "a rather high order of stability" (p. 634). In agreement with Midanik's (1988) conclusions, Bachman et al. indicated that certain information (i.e., recent reports of use) is more likely to be remembered than other information (frequency of use over a longer time). Reinisch et al. (1991) examined inconsistent and incomplete data within a questionnaire and inconsistencies between questionnaires in their Project Alert. They found very little inconsistency and concluded that questionnaires were valid. Other investigators (Barnea et al., 1987; Single et al., 1975) reported similar results. Analysis of all three forms of validity (external, construct and internal) indicates that self-report data are generally valid; Harrison and Hughes (1997) provided a useful review of the validity of self-reports about drug use.

*Biological measures.* Researchers can directly measure the use and impact of various licit and illicit substances by students, again with human subjects' approval and the voluntary cooperation of research subjects. A recent North Carolina study (Foss et al., 1999) used blood alcohol concentration (BAC) tests to assess how much alcohol students returning to their dorms had actually consumed. Time-bounding issues are particularly important in making comparisons to survey results, which are often about much longer time periods than detectable using BAC levels. Biological measures stand as an important check on the valid-

ity and reliability of self-reports, but their cost as well as the restrictiveness of their representativeness of conduct remain problematic (for a detailed discussion, see Harrison and Hughes, 1997; Winters, 1999).

*Field studies of college drinking.* Survey and experimental approaches to studying college drinking predominate. The field is in need of more research that looks at college drinking using field research techniques. Studies such as one based on the direct observation of students at a large state university (Moffatt, 1991) yield "thick description" of actual student behavior in natural settings and are particularly helpful in gaining insight into how the participants themselves view their own conduct (see also Geller et al., 1986). Generalizing from the results of field research is often problematic. There is a large gap between how researchers and administrators view college drinking, emphasizing its negative effects and the heightened risk of health and behavioral consequences, and how students view their use of alcohol.

*Ecology of alcohol use.* Empirical research has been conducted about alcohol outlet availability and various indicators of crime and violence in several U.S. settings, with most research suggesting a substantial relationship. One national study (Wechsler et al., 1994) reported that colleges located more than a mile from the nearest alcohol outlet had lower rates of heavy episodic drinking than colleges with outlets within a mile. Clearly more structured research is needed on where and when students use alcohol. Developments in evaluating community initiatives (Fulbright-Anderson et al., 1998) should help in understanding these issues.

In part because of the dramatically lower cost and greater analytic power of geographic information systems (GIS) software and in part because of greater interest in how access to alcohol and other substances shapes behavior, GIS and mapping have become of much greater interest in research. In alcohol studies, the relationship between alcohol outlets and several outcomes such as violence and car crashes has been researched, yielding insight into the role of supply in shaping alcohol-related problems (e.g., Gruenewald et al., 1996; Rich, 1999). Mapping has become an active area of research about crime and justice issues more generally. Much will be learned about the occurrence of college alcohol-related problems by examining its spatial patterning (Croner et al., 1996), both for communities (Gruenewald et al., 1996; Scribner et al., 1999) and for campuses.

*Measures of alcohol involvement.* Particularly critical to research about college drinking are measures of alcohol involvement, including measures of consumption (especially alcohol use, quantity and frequency measures), and alcohol-related consequences (including alcohol-related problems and substance use disorders). Researchers have

developed a set of measures now widely used in the field (Clark and Hilton, 1991).

*Use: Quantity and frequency measures.* Self-report survey items have been developed that measure the amount of alcohol and frequency of drinking, specifying a time period of daily, weekly or biweekly, monthly or yearly intervals (Clark and Hilton, 1991; Straus and Bacon, 1953; Wechsler and McFadden, 1979). Following epidemiological standards, these measures yield current or lifetime estimates of the incidence and prevalence of alcohol and other drug use. Dufour (1999) reviewed the literature about how to measure the frequency and amount of drinking, noting the methodological issues involved in measuring alcohol consumption levels and drinking patterns. Her review assessed the major research approaches currently in use in measuring these issues as well as the question of how to establish what constitutes "moderate" drinking.

*Heavy episodic drinking and frequency of intoxication.* Research about youth alcohol use has tended to use some type of measure indicating heavy episodic drinking. (This has been called "binge drinking" by a number of investigators and organizations, including the Monitoring the Future Study, the Core Alcohol and Drug Survey, the U.S. Surgeon General, the Centers for Disease Control and Prevention, the World Health Organization and the Robert Wood Johnson Foundation. The policy of the *Journal of Studies on Alcohol* discourages use of that phrase in this context, and so "heavy episodic drinking" is used throughout this article.) There has been general agreement about the desirability of using this measure (usually constructed as drinking five or more drinks in a row or at a sitting), with national studies such as the Monitoring the Future series, the Harvard School of Public Health College Alcohol Study and the Core Institute series all using a similar definition.

Wechsler et al. (1995b) examined the five-drink measure using a large national sample. Men who regularly drink five drinks or more in a row run roughly the same risk of alcohol-related problems as women who regularly drink four drinks or more in a row. They proposed use of a gender-specific (5/4) measure of heavy episodic drinking.

Wechsler and Austin (1998) indicated that the 5/4-drink measure should be viewed as a cutoff, beyond which students increasingly report higher likelihood of alcohol-related problems. Importantly, several different national studies of college drinking all report roughly two in five college students are current heavy episodic drinkers.

Frequent heavy episodic drinkers were defined in the same study as those students who had three or more episodes of heavy episodic drinking in the 2 weeks before responding to the survey. Roughly one in five college students can be so classified, and this 23% of students consumes 72% of all alcohol used by college students and experiences more than 60% of the major alcohol-related problems of college students (Wechsler, 2001; Wechsler et

al., 1999). These frequent heavy episodic drinkers are at much higher risk of alcohol-related problems than are infrequent heavy episodic drinkers. Occasional and frequent heavy episodic drinkers also have much higher rates of drinking with the intention of getting drunk. Self-report measures of the frequency of drunkenness are helpful in understanding alcohol-centered lifestyles.

Finally, use of the timeline follow-back diary technique will help to shed light on these issues. The timeline follow-back asks respondents to make estimates of their alcohol consumption using calendars kept over a specific period of time. Midanik et al. (1998) reported that use of this technique has demonstrated good validity and reliability with several different types of samples, although generating estimates of overall alcohol consumption that vary from those collected using summary measures. Summary measures are thought to underestimate real consumption, so this aspect of the use of the timeline follow-back technique may be one of its strengths.

*Acute health and behavioral consequences.* It is useful to distinguish between effects that occur to the individual drinker as opposed to those that occur to others in the immediate environment. The former might be called the primary effects, and the latter might be called secondary or second-hand, as in second-hand smoke (Wechsler et al., 1995c).

Some of the most important primary effects are captured by survey items that ask whether an individual has experienced particular effects over a specific period of time as the result of his or her own drinking. These include educational, health, psychological, interpersonal and behavioral consequences.

Measures of the secondary effects of heavy episodic drinking include being awakened or disturbed; being insulted; being assaulted verbally, physically or sexually; or having property vandalized.

*Academic consequences.* Some studies (e.g., Wechsler et al., 1994) found a strong association between current alcohol use or heavy episodic use and self-reported academic problems. Wood et al. (1997) examined how well freshman year alcohol involvement predicted academic problems in college using a longitudinal design and academic performance data taken from college transcripts. They concluded that much of the association is due to preexisting student characteristics present on admission to college. In addition to better understanding of academic consequences, studies of the impact of substance use on persistence through college are needed. A whole range of important educational issues remain to be studied, such as the effects of alcohol policy or program changes on size and quality (e.g., SAT scores) of future applicant pools, the dropout or completion rate and academic achievement.

*Short screens for problems.* Several forms of short screening for alcohol-related problems have been used ex-

tensively in empirical research, such as the Michigan Alcoholism Screening Test (MAST; Selzer, 1971). Such short screening forms involve asking only a few questions to identify quickly and crudely whether a person may be experiencing alcohol-related problems. Among the most widely used is the CAGE (Mayfield et al., 1974). Winters (1999) presented a detailed discussion of the strengths and limitations of the CAGE and the MAST and other instruments for screening and assessment of substance dependence and/or misuse.

*Time bounding and duration issues.* Some of the most challenging issues in this field deal with the measurement of time and the duration of problem drinking. Because recall of long-term complex behavior is difficult for research subjects, questions about alcohol consumption often are limited to the past 2 weeks, month or year. But enough is known about patterns of behavior to suggest that present behavior is shaped by patterns stretching out over many years, raising very serious and intractable problems for contemporary research. A particularly important area for future study is the pattern of behavior from high school to college, part of the developmental issues of young adulthood (Bachman et al., 1997). Another related problem concerns the uneven and complex behavior of people over time, so that patterns of behavior shift over time. Developments in statistical analysis, variously called event history analysis or time failure analysis (e.g., Allison, 1984), help in analyzing these patterns, but data collection remains problematic.

*Crime and crime victimization.* Considerable research has been done in fields such as criminology about the appropriate measurement of crime and crime victimization, topics of great importance to better understanding college drinking. Measuring crime and crime victimization calls for research that reflects this complexity. A national study of crime on campus by Fisher (1998) reported that alcohol use and misuse are significant factors in "campus crime." Her research employed an adaptation of the National Crime Victimization Survey methodology to the study of college populations.

*Date rape and sexual assault.* Of particular concern at colleges and universities is the issue of sexual assault and date rape. For example, Koss and Gaines (1993) produced extensive research about how to measure the amount of sexual assault and acquaintance rape on college campuses. Considerable anecdotal evidence and reviews of a diverse literature (Abbey, 1991; National Center on Addiction and Substance Abuse [CASA] at Columbia University, 1999) suggest that alcohol misuse is strongly associated with the risk of sexual assault. Recent data for college campuses show that sexual victimization is widespread and associated with alcohol misuse (Brener et al., 1999; Fisher et al., 2000). Research on this and related topics (e.g., involuntary sex) remains a high priority.

*Sexual orientation.* Among those topics yet to be addressed extensively is the issue of sexual orientation. Anecdotal evidence suggests that many students of traditional college age must deal with issues of sexual identity during college, but little research has been done about how this influences their use and misuse of substances such as alcohol. DeBord et al. (1998) reported that gay, lesbian and bisexual students were more likely to use and/or misuse alcohol than were heterosexual students.

*Routine activities.* The field of college drinking could be enhanced by attention to promising theoretical and empirical approaches used in adjacent areas of study. One of the most promising is the "routine activities" model currently employed in criminology to assess the heightened risk of crime victimization or offending associated with certain patterns of behavior (Dowdall et al., 1999; Fisher, 1998). The approach moves analysis from preoccupation with the motivations of the individual offenders or victims to an understanding of situational factors. Routine activities suggest facets of behavior that might be modified with an eye toward preventing crime victimization among college students (Fisher, 1998). Osgood et al. (1996) demonstrated that participation in certain routine activities is strongly associated with both heavy alcohol use and use of illicit drugs in a study of 18- to 26-year olds.

*Supply-side factors.* Among the most understudied areas in college drinking are the supply-side factors. Most traditional-age college students are under 21, so consumption of alcohol often involves the violation of state and local laws by students and alcohol providers. The role of availability and context shapes behavior, but little is known about the issue, and even less about local alcohol markets, legal or otherwise. Evidence (e.g., Chaloupka and Wechsler, 1996, 1997) suggests that the cost of alcohol is an important factor. Wechsler et al. (2000a) found that availability, price and the use of beer were the strongest predictors of heavy episodic alcohol use in underage students.

*Student residence and social context.* Extensive research about the lives of college students (Astin, 1993; Pascarella and Terenzini, 1991) suggests that the formal structures of college life are of relatively less importance than the ways in which peer groups influence behavior. Gfroerer et al. (1997) examined data from the National Household Survey on Drug Abuse, finding that educational status and living arrangements were significant in predicting substance use among those of traditional college age. During the past decade there has been extensive growth in student living arrangements beyond the traditional dichotomy of dormitory or home. The rise of "resimuters," students who live near their institutions but are unsupervised by parents or colleges, needs to be more adequately studied.

Whether alcohol is permitted in the dormitory or the entire campus is related to the level of drinking, alcohol-related problems and secondhand effects experienced by

nondrinking students. Wechsler et al. (2001a,b) examined substance-free dorms and campuses that ban alcohol, controlling for previous drinking behavior of these students in substance-free environments.

*Social norms.* Considerable attention has been given to the question of the prevailing norms that surround college drinking. One school of thought (Haines, 1996; Haines and Spear, 1996) suggests that students misperceive the actual behavior of their peers, assuming much higher rates of substance use than in fact prevails. This has led some to suggest that correcting the misperception of norms might lower alcohol use, although empirical evidence seems to be conflicting, with some universities reporting decreases and others reporting no change (Haines, 1996; Keeling, 2000). In addition, Wechsler and Kuo (2000) concluded that the potential role of social norms in influencing college students' drinking may have been overstated. Research is needed on other types of student norms, such as supplying alcohol to underage drinkers and tolerating disruptive secondhand effects, as well as on local community norms.

*Causal models.* Nonexperimental causal models such as path analysis and structural equation modeling can help shed light on some key issues in college drinking research. Of particular interest is the ability to include analysis of how variables play a role in selecting individuals into situations that themselves influence the risk of heavy episodic drinking. For example, certain students (with high rates of substance use in high school) choose certain colleges (with active fraternity systems and high rates of heavy episodic drinking) and then certain living arrangements (such as in fraternity houses). Causal models hold out the promise of helping to understand this process, moving findings beyond complaints about selection bias (Olmstead and Bentler, 1992).

*Complex sample designs.* In college drinking research, complex sample designs are coming into wider use. Such designs might first create representative samples at the college level and then sample randomly among students at each college. The resulting complex sample requires special statistical analysis to take into account that the students at a single college may share certain characteristics. Statistical tools, such as generalized estimating equations and hierarchical linear modeling, allow adequate statistical analysis of such samples (Bryk and Raudenbush, 1992). Statistical packages such as SAS (SAS Institute, Inc., Cary, NC) now allow analysis of these samples.

### Conclusions

Since Straus and Bacon (1953) published their pioneering work about drinking in college, there has been much progress in understanding the issue. Much more, however, remains to be learned. We have argued for widening the lens; incorporating new perspective, variables and method-

ologies; and sharpening the focus through better conceptualization, measurement and sampling. Substance misuse is arguably the nation's number one health problem, as much for college students as for other Americans (Robert Wood Johnson Foundation, 2001). A view of college drinking that is both expanded and clarified holds promise for advancing understanding and enhancing prevention.

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