A Comparison of Two Measures of Low Response to Alcohol Among Heavy Drinking Male College Students: Implications for Indicated Prevention

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Low response (LR) to alcohol is a risk factor that strongly predicts later problems. This study compares subjective measures of high tolerance (HT) to measures of LR, using the Self-Rating of Effects of Alcohol (SRE) form. First-year heavy drinking students (N = 250) at an all-male college completed a survey during a mandatory class that included the SRE, past month peak consumption, 2-week heavy episodic use, family history, self-reported high tolerance, and whether it takes more alcohol to become impaired compared to others. The SRE identified LR for 96.7% of those reporting HT and 100% of those reporting both HT and that it takes comparatively more alcohol to become impaired. The measure of HT correlated more with heavy drinking than did that of LR (peak of 14.5 drinks and 4.3 occasions of heavy episodic drinking vs. 12.6 and 3.7) whereas those identified as not LR drank less than those who reported no HT (peak of 6.1 drinks and 1.3 occasions of heavy episodic drinking vs. 9.6 and 2.4). Those reporting uncertainty about HT averaged peaks of 10 drinks and 3.13 occasions of heavy episodic drinking; 73.6% scored LR on the SRE. These data suggest that, at least in a heavy drinking group, the SRE may be most effective as a selected follow-up to an initial two-question screening. Self-reporting a high tolerance provides as much information as the 12-question SRE and is associated with heavier use. The SRE may provide corrective feedback to those who report uncertainty about HT or who give conflicting responses to the two screening questions.

KEY WORDS: tolerance; low response; SRE; perception of risk.

INTRODUCTION

Increasingly, research indicates that perception of risk influences alcohol and drug choices. Bachman et al. (1988, 1998) found that perception, and peer disapproval, better explain temporal changes in marijuana use than do the generic psychosocial risk factors that are a more common focus of prevention programs. When perception of risk and peer disapproval increased, drug use decreased, even among students who had the strongest risk indicators. Similarly, Bailey et al. (1992) found that general psychosocial risk indicators adequately predicted who would initiate marijuana use whereas perception and biological response better predicted who would continue or discontinue use. More recently, Feldman et al. (1999) found that concern about health is a leading reason for teens not using alcohol.

Greenfield and Rogers (1999) reported that adults’ low perception of risk for consuming beer predicted higher consumption and drunk driving. Nelson et al. (1999) found that men who believed they could consume six or more drinks before they were too impaired to drive were 45% less likely to make plans to avoid drunk driving. Sjöberg (1998) suggests people admit that alcohol is dangerous to society in general but maintain their own risk is quite low. One logical
question, then, is, “How can prevention programs alter personal perception of risk?”

The lifestyle risk reduction model uses a prevention protocol in which altering risk perception is the first step to promote behavior change. The model proposes five conditions necessary for change, the first that people should believe the risk is real and that their only means of managing it is through their choices. Working from the model, Daugherty and O’Bryan (1992, 1998) and Daugherty and Leukefeld (1998) further contend that understanding biological risk can increase personal perception of risk. They suggest that many people may feel they can control psychosocial risk factors whereas few feel that they can control biological risk. Theory that can translate biological research into successful prevention measures must allow people to conceptualize risk that they can understand, believe, and behaviorally manage.

Schuckit’s theory on low response (LR) seems to fit these criteria (Schuckit, 1994a). He suggests that intensity of biological response to alcohol may partially explain risk for abuse and dependence. Intensity of response does not directly cause alcohol dependence but could “place an individual at higher or at lower risk of developing a pattern of repeated heavy drinking.” What Schuckit refers to as a LR to alcohol, most people refer as “high tolerance” (HT). There is a technical difference. Tolerance is the decreased response that occurs after drug exposure. The initial response is referred to as sensitivity. Schuckit has chosen to define these criteria (Schuckit & Smith, 1996; Volavka et al., 1997b). For example, Schuckit and Smith (1996; Schuckit, 1998) reported high tolerance. A Medline search disclosed no literature either describing how the SRE performs or how to interpret signs are present, it seems reasonable that prevention programs could increase personal perception of risk. Accomplishing this implies two steps: (1) convincing people that LR is a potent risk factor and (2) helping people see whether they have LR. Prevention professionals may feel better prepared to address the first step, because it is not feasible to subject most prevention audiences to laboratory tests. Schuckit tried to address the second by developing and testing the Self-Rating of the Effects of Alcohol (SRE) form. He intended this to be used in research settings and to educate people “that their reaction to alcohol might relate to their alcoholism risk” (Schuckit et al., 1997b).

Although laboratory data support the validity of the SRE, it is time consuming to complete with a large audience. Groups with less education often need help in understanding how to calculate their scores. Our attempts to use the SRE with drunk driving offenders, for example, have been affected by these constraints. Because what Schuckit identifies as LR is similar to the average person’s description of HT, prevention practitioners may wonder if the SRE provides more information than using a subjective assessment of high tolerance. Although subjective criteria can be implemented quickly, they may be less accurate.

Researchers in the United States, Denmark, and Australia have demonstrated that LR predicts alcohol problems up to a decade later (Heath et al., 1999; Rodriguez et al., 1993; Schuckit & Smith, 1996; Volavka et al., 1996). For example, Schuckit and Smith (1996; Schuckit, 1998) reported that either LR to alcohol or family history of alcoholism in males 18–24 is associated with increased risk for future abuse or dependence. In their sample, about 60% of males with a family history of alcoholism and who exhibited LR qualified for a diagnosis of abuse or dependence within 9 years. Pollock (1992) confirmed that sons of alcoholics exhibit a low response to alcohol, and recent data show this effect in daughters (Schuckit et al., 2000).

Given the evidence that LR may be an excellent predictor of increased risk, even before other