



## Social desirability biases in self-reported alcohol consumption and harms

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### ABSTRACT

**Aims:** Self-reports remain the most common means of assessing alcohol consumption despite concern for their validity. The objective of this research is to assess the extent to which social desirability biases relate to self-reported consumption, hazardous use, and harms.

**Methods:** In each of two studies presented, undergraduate students ( $N=391$  and  $N=177$ ) who reported that they had consumed alcohol in the past year completed online confidential surveys.

**Results:** Both studies show consistent associations between impression management bias and self-reported consumption such that high impression managers report 20 to 33% less consumption and are about 50% less likely to report risky drinking. No significant correlations involving consumption were found for self-deception bias. Study 2 also indicated that high impression managers report 30–50% fewer acute harms following a drinking episode, and that these effects are maintained after controlling statistically for trait impulsivity/constraint.

**Conclusions:** Impression management bias represents a significant threat to the validity of self-reported alcohol use and harms. Such bias may lead to misspecification of models and under-estimates of harmful or hazardous use.

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### 1. Introduction

Surveys are frequently used to assess whether and the extent to which people use illicit drugs and alcohol, engage in risky sexual practices, or participate in other activities that may be illegal, highly personal or sensitive. Prevalence rates based on self-reports of such behavior, however, are regarded generally with some skepticism on the assumption that some respondents are unwilling to divulge such information, cannot recall accurately, or do not answer honestly owing to a desire to present themselves in a favorable light.

It is important to estimate the extent of bias in these reports, and to reduce them, because such reports are often used for planning and policy purposes and for testing theoretical models (e.g. Cooper, 2002; Taylor, Rehm, Patra, Popova, & Baliunas, 2007). For example, when researchers attempt to assess the social costs of different consumption patterns, they rely on self-reports. In their analyses of the effect of alcohol consumption on health care costs, Taylor et al. (2007) applied a correction factor of 2.7 to self-reported quantity–frequency estimates for heavy drinkers, suggesting that heavy drinkers (but not light drinkers) are grossly underestimating their consumption. If

some heavy (or moderate) drinkers have understated their consumption, and are thus misclassified, the accuracy of the model is reduced.

Several researchers have demonstrated that self-reports of consumption do not adequately capture how much alcohol is consumed (e.g., Knibbe & Bloomfield, 2001). Stockwell and colleagues (Stockwell et al., 2004; Stockwell, Zhao, Chikritzhs, & Greenfield, 2008) have compared self-reported consumption patterns from nationally representative samples to aggregate sales data, and report that the common quantity–frequency measure generally captures only about 50% of alcohol sales, suggesting significant under-reporting. Stockwell et al. (2008) report that other methods, such as the Yesterday method (where population estimates are based on each participant's recall of how much he or she drank yesterday) and graduated frequencies (where participants are asked to recall how often over a specified period of time they consumed various quantities of alcoholic beverages, starting with large quantities and working down to small quantities), tend to yield somewhat better estimates, but still significantly under-estimate actual sales data. Others have also shown that accuracy of reported consumption decreases the further back one is asked to recall. Gmel and Daepfen (2007) have shown that reports of daily consumption become progressively lower over the space of a week, arguing that this represents a reporting bias. These studies suggest that under-reporting occurs, but they do not indicate where, or in which segments of the population, misreporting is most prevalent.

The issue of veracity of self-reported alcohol use has shifted from whether reports are accurate to analysis of the factors that affect the

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degree of accuracy. Del Boca and Darkes (2003) have argued that contextual factors play a significant role in the accuracy of self-reported data on alcohol consumption. For example, prevalence rates vary as a function of the assessment method and whether anonymity or confidentiality is assured. In a recent review of this literature, Tourangeau and Yan (2007) found that self- and computer administered anonymous surveys yield higher endorsement rates on sensitive topics than do face-to-face, telephone, or non-anonymous interviews. It is important to note, however, that using online anonymous surveys to collect data on such topics may not entirely alleviate the problem (see e.g., Adams, Parkinson, Sanson-Fisher, & Walsh, 2008; Booth-Kewley, Larson, & Miyoshi, 2007).

In the studies we report below, we take the approach that individuals differ in the extent to which they are willing to be forthright in their reports of alcohol use and related harms. That is, we examine the extent to which reports of alcohol consumption and harms are related to an independent assessment of one's tendency to respond in a socially desirable way. A socially desirable response is one that is influenced by the perception that others will be evaluating that response. Someone who is responding in a socially desirable way might tailor his or her reported attitude or behavior to conform to what he or she thinks is appropriate, acceptable, or desired by others.

### 1.1. Assessment of social desirability biases

The assessment of the degree to which an individual is responding in a socially desirable way has been an issue for personality and clinical psychologists for more than 60 years. Concerned about lying and faking on the Minnesota Multiphasic Personality Inventory, Meehl and Hathaway (1946) empirically developed a scale using items that distinguished individuals with a "tendency to be defensive or to put oneself in too favorable a light" (p. 560). Crowne and Marlowe (1960) likewise developed a set of items, some from the MMPI, which reflected a motivation to respond in a socially desirable way. People who score high on the well-known Marlowe–Crowne Social Desirability Scale (M–C SDS) are susceptible to social influence and conformity—they want approval from others—and demonstrate this by tending to endorse self-descriptions that are too good to be true. From this perspective, the tendency to present oneself in a favorable light is regarded as an individual difference variable. People who score high on the Marlowe–Crowne Social Desirability Scale tend to adjust their responses to conform to the wishes or expectations of others whom they wish to please.

To our knowledge, only one study has assessed the extent to which socially desirable response tendencies relate to reports of consumption of alcohol. Welte and Russell (1993) used a short form of the M–C SDS in a general population survey of alcohol and stress. They found that individuals scoring high on the abbreviated M–C SDS tended to report one half to one third the number of heavy drinking occasions ( $\geq 5$  drinks) than those scoring low on the M–C SDS. They reported that alcohol-related variables correlated in the range of  $-.09$  to  $-.17$  with M–C SDS scores.

The M–C SDS, however, has been criticized for its inability to distinguish distinct biases: the tendency to intentionally present oneself favorably, to appear good in the eyes of others (referred to as impression management), and an unconscious tendency to think of one's self in an overly positive way (i.e., to self-enhance or self-deceive; Paulhus, 1984). Paulhus (1984, 1986; Paulhus & Reid, 1991) developed and validated a questionnaire that distinguishes these two motivations, known as the Balanced Inventory of Desirable Responding (BIDR). The BIDR represents an advance over the earlier M–C SDS insofar as it assesses separately impression management and self-deception, is balanced in terms of positively-keyed items (i.e., endorsing good qualities) and negatively-keyed items (i.e., denying undesirable qualities), and does not contain items that directly reflect adjustment. The BIDR has now been used in hundreds of personality

and attitudinal research studies and is widely regarded as the best instrument for assessing these two sources of bias (e.g., Olson, Goffin, & Haynes, 2007). Below we describe these two components of social desirability.

Impression management reflects a tendency to self-attribute saintly or virtuous characteristics and deny socially deviant impulses or behaviors (e.g., "I always pick up my litter on the street"). In contrast, self-deception reflects a tendency to exaggerate (unconsciously) desirable qualities (e.g., "my first impressions always turn out to be right"; Paulhus, 2002). Consistent with this, impression management scores are more responsive to instructions to "fake good" and role-playing instructions (e.g., imagine you are applying for a job) than are self-deception scores (Paulhus, Bruce, & Trapnell, 1995). Self-deception scores, on the other hand, tend to be more strongly related to measures of self-esteem and adjustment (Lanyon & Carle, 2007; Paulhus, 1991). To the extent that people care a great deal about the impression they are making on others, we expect that they will be motivated to downplay or "low-ball" the extent to which they consume alcohol and experience harms from use. Impression managers do not want to appear to have a "drinking problem" because to do so would be stigmatizing and unattractive. Significant associations are not anticipated for the relation of alcohol consumption to self-deception. That is, there is no reason to believe that people understating their consumption are doing so because they view themselves as actually drinking less. However, people who do engage in self-deception may be motivated to unconsciously deny the experience of harmful consequences as these drinking outcomes are especially difficult to integrate into their positive self view.

Surprisingly, the BIDR has not been used as a means of assessing the extent to which reports of alcohol and/or drug use are underestimated. The BIDR has, however, been used to assess the extent to which self-deception and impression management tendencies correlate with reports of sexual attitudes and behavior among university students (Meston, Heiman, Trapnell, & Paulhus, 1998). Meston and colleagues found that self-deceptive enhancement was generally uncorrelated with reports of sexual behavior, but found modest but consistent correlations in the range of  $|.13|$  to  $|.26|$  between impression management scores and reports of sexual behavior, such that those with high impression management scores were more likely to report less sexual experience. Controlling for individual differences in personality traits, including conservatism, did not significantly attenuate these effects.

It is important to note that impression management represents a conscious attempt to downplay or under-estimate what one perceives to be socially deviant behavior. To the extent that moderate consumption of alcohol is perceived to be socially acceptable, an impression manager is not likely to feel the need to under-estimate his or her consumption. It is only when consumption goes beyond what one considers socially acceptable will he or she be motivated to understate his or her consumption. Thus, we anticipate that impression managers will be inclined to under-estimate reports of quantity and frequency of consumption and the number of times they drink heavily.

### 1.2. Overview of studies

In the research presented here we examine the extent to which self-deception and impression management scores correlate with self-reports of alcohol use in two independent university student samples. Our focus in Study 1 is on assessing the extent to which impression management and self-deception biases are associated with self-reported daily consumption, typical consumption, frequency of heavy drinking, and risky drinking. Our focus in Study 2 is on assessing the extent to which these biases are associated with reports of alcohol-related harms and the extent to which these biases confound previously observed links between heavy consumption and harms.

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