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## ADOLESCENT ESTIMATION OF PEER SUBSTANCE USE: WHY IT MATTERS

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### Keywords

Drinking; overestimation; peers

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It is always gratifying to read a paper that provides new perspectives on an established ‘truth’. In this issue of *Addiction*, Hilde Pape concludes after reviewing the literature that the well-established axiom that adolescents overestimate peer substance use may itself be overestimated [1]. Many papers have shown that adolescents report higher substance use (SU) prevalence on average among their peers relative to their own use. Other papers have shown that adolescent SU is higher and increases more rapidly over time among those with substance-using friends [2,3]. Pape does not refute the relationship between adolescent and peer SU, but argues that the variability in the disparity in adolescent and peer SU by drug, age, sex and peer referents is poorly characterized, and the following methodological limitations create bias leading to findings of greater disparity in peer and adolescent SU than may be actual.

1. Researchers and journals tend to publish findings on SU over-reporting and not under-reporting.
2. Adolescents may under-report their own SU in respect to the one of their peers if it is perceived to be socially desirable or if adolescents are concerned about the confidentiality of their responses.
3. Survey questions commonly ask about ‘other adolescents’ rather than about more proximal and specific peers such as ‘best’ or ‘close’ friends, leading to adolescent overestimation.

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### Declarations of interest

None.

4. Few studies allow students to report that they do not know, although not all adolescents can be expected to have precise knowledge of the SU behaviour of their peers.
5. Many studies report relatively low rates of participation and substance users may be less likely to participate or to respond to the items on SU, which reduces estimations of adolescent use.

The extent to which adolescents and peers are similar with respect to SU is important, because social norms figure prominently in adolescent substance use theories [4]. Accordingly, adolescent norms regarding the prevalence of peer use are thought to influence adolescent SU. The more prevalent a substance is thought to be, the more normative and socially acceptable its use would be considered. While there are other important aspects of normative influence, notably injunctive norms regarding the beliefs about substance use of peers, only descriptive norms are typically measured. Notably, significant associations between adolescent and peer use have been reported in cross-sectional and prospective studies in which adolescents report peer use [3] and in network analyses of independent estimates by adolescents and their peers [5].

It is commonly argued that adolescent SU is likely to be influenced by perceptions of prevalence apart from the accuracy of these perceptions. However, overestimation of peer use may create bias in the analyses of selection and socialization. Adolescents share cognitions and behavioural propensities with their friends, an effect of socialization, and make friends with those who think and behave like them, an effect of selection. To the extent that adolescents project their own behaviour when they report their perceptions of the SU prevalence of peers, found relationships between adolescent and peer SU would be biased due to over- or underestimation [6].

Due to cost-efficiency, survey research remains the major method by which we gain information about adolescent and peer SU, and if we are to understand this complex process more clearly we need accurate estimations of both. Pape is less clear about how adolescent and peer SU can be best documented than she is about the problems with current approaches, but her paper suggests the following possible improvements in survey research.

1. Reduce non-participation (especially of heavy drinking individuals) and non-response. However, it is not entirely clear to us whether this is specific to the underestimation of peer SU or whether it is a common phenomenon in SU research in general.
2. Provide 'I don't know' response options. This might attenuate the fact that people are forced to give an answer even if they have truly no idea. However, it is not quite clear to us in which way this affects the overestimation of peers' SU, as people might over- or underestimate values when forced to answer.
3. Improve questions by specifying proximal peer referents. However, this raises the question as to how proximal is proximal enough, as even best friend SU might not be a good proxy for a given individual's peer group's SU [7].

4. Conduct surveys in group settings to provide better peer context. However, this could create other bias.

While improvements in the use of the best available survey methodology are needed, additional experimental studies on the effects of various methods and assessment contexts may be warranted, for example, barring laboratory studies and taste-rating experiments [8, 9]. In addition, some aspects of social influences may best be understood through social network analyses, which provide independent estimates of adolescent and peer SU. Also, Pape's research has implications for intervention. At least with college-aged youth, it seems that altering perceptions of peer prevalence—whether or not they are estimated correctly—can lead to reductions in adolescent binge drinking [10].

Essentially, if we are to gain a better understanding of the relationship between adolescent and peer SU and improve SU prevention approaches we need to assess adolescent and peer SU more accurately.

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