The set of papers contained in this Supplemental Issue of Drug and Alcohol Dependence confirms some widely held beliefs about psychiatric comorbidity and prediction from psychiatric disorders to drug use and abuse, but it challenges others.

1. Conduct disorder

First, the link between conduct disorder and drug use and abuse is confirmed in great detail. Evidence is presented cross-sectionally (Roberts) and prospectively (Cohen, Costello, Gibbons, Fergusson, Pardini, Wittchen), for conduct disorder as a strong predictor of the use and abuse of tobacco (Fergusson), alcohol (Costello Fergusson, Pardini), cannabis (Cohen, Fergusson, Wittchen), and other illicit drugs (Fergusson) across the age range from age 7 to adulthood. The wealth of prospective data presented here does away with any concerns about order effects: conduct problems precede drug use and abuse.

This set of findings, however familiar they may be to many readers of this journal, has important implications for the organization of research into prevention and treatment. If we accept the argument that prevention needs to target risk factors as early as possible (Mrazek and Haggerty, 1994), then drug prevention policy-makers need to consider the evidence that very early (pre-school) intervention may be the most cost-effective way of preventing conduct problems (Tremblay et al., 1995, 1992). It follows that the best way to prevent drug abuse may be early intervention to prevent conduct problems (Ialongo et al., 1999; Storr et al., 2002).

However, the papers in this issue also show that the relationship between conduct disorder (CD) and substance use disorders (SUD) changes with developmental stage, with sex, and possibly also with race/ethnicity. The younger the sample, the stronger the prediction from CD to SUD (Gibbons). In Fergusson’s 17–25-year-olds, early CD did not predict alcohol use, but it did predict abuse/dependence, as well as use of cannabis and other illicit drugs. This is consistent with an earlier paper in this journal showing that the effect of CD on onset of drug use was strongest at age 13 and “faded” after about age 16 (Sung et al., 2004). This leads to a question that cannot be answered by most of these data sets as the subjects are too young: if conduct disorder predicts early drug use, does it also predict continuing drug use or abuse later in life when the prevalence curves begin to fall? Cohen’s paper suggests that this may be the case at least for alcohol and cannabis.

2. Attention deficit/hyperactivity disorder (ADHD)

The papers in this issue demonstrate that, in these community-based samples, the links between ADHD and drug use and abuse are quite weak and statistically non-significant once the strong comorbidity between ADHD and conduct disorder is controlled (Fergusson, Pardini, and Costello, Wittchen). It is important to establish this non-association firmly because of fears that treating ADHD with a psychotropic medication would increase the risk of self-medication later in life (Wilens and Biederman, 2006), although at least one study has found that treating ADHD may reduce the risk of later SUD (Katusic et al., 2005). Where the scientific literature finds that ADHD predicts drug abuse, it is generally in clinical or other very high-risk samples (Putninš, 2006; Wilens and Biederman, 2006).

3. Emotional disorders

In relation to emotional disorders (depression and anxiety disorders) the findings presented here are more varied. In the case of alcohol use and AUD, Roberts found a strong cross-sectional association between AUD and mood disorders, but not anxiety disorders, after controlling for disruptive behavior disorders. On the other hand, Pardini et al., using data from the Pittsburgh Youth Study of boys, found that adolescent depression predicted AUD in young adulthood, but only in boys with high levels of conduct problems; similarly, Costello et al., found no prediction from depression to AUD after controlling for CD.

What should we make of the radical disagreement among these papers on the role of emotional disorders in the development of drug abuse? In the study of German adolescents and young adults from Wittchen et al., there was a significant cross-sectional association between depression, mania, and panic and both cannabis use and cannabis use disorder, even after controlling for conduct problems. Similar patterns were seen in...
predictive analyses from emotional disorders and cannabis, but these did not control for comorbidity with behavioral disorders, so it is not clear whether the prediction from emotional problems to cannabis use and abuse would hold if controlled for comorbidity. However, Roberts et al. found no cross-sectional association between cannabis abuse or dependence after controlling for conduct disorders in their younger (age 11–17) sample.

The epidemiologic literature predicting emotional disorders from cannabis use cannot help us to resolve this dilemma, in part because studies do not control for conduct disorder (Arseneault et al., 2002; Bovasso, 2001; Chen et al., 2002; Rey et al., 2002) (or do not report doing so). So, it is still unclear whether the links between cannabis use disorders and emotional disorders (especially depression and panic disorder) that are found in clinical studies occur in the general population, and if so whether cannabis use predicts depression or vice versa. This is clearly a subject that deserves a careful review of the epidemiologic literature.

4. Personality disorders

The Cohen et al. paper adds something unique to the comorbidity literature in showing that personality disorders predicted both the likelihood and the age at onset of drug and alcohol abuse across adolescence and early adulthood. There is an historical literature on personality and drug abuse (e.g., Block and Block, 1988), but this has mainly concentrated on personality “types” rather than personality disorders. Cohen et al. created DSM-IV Axis II personality disorders from their child and adolescent data (using CD as a proxy for antisocial personality disorder) and showed that although CD, as in the other studies, was the strongest predictor of alcohol, cannabis, and other illicit drug use, other personality disorders continued to predict, even after controlling for CD, in particular borderline, histrionic, and passive-aggressive personality disorders. These findings contrast with the modest or non-existent predictions from Axis I disorders to SUD, with the exception of CD.

5. Conclusions and needs for future research

The conclusions drawn by the papers presented here have the strength of representative, community-based samples behind them. The authors all strove in different ways to go beyond a simple temporal association between psychopathology and SUD, and to search for causes of the observed links. The Gibbons paper, for example, is important in pointing out that perceived racial discrimination, along with conduct problems, predicted alcohol problems in African American youth. Discrimination predicted CD 2 years later, and the latter absorbed the independent effect of discrimination on SUD. The Costello et al. paper confirmed the importance of early pubertal maturation, but showed that it affected the movement from use to abuse/dependence differently in males and females. Blozis et al. used their longitudinal data to develop a model of adolescent alcohol use that had different predictions to adult alcohol use disorder depending on which developmental pathway the adolescents followed. They pointed out that likelihood of early use (by age 13), frequency of use, and change in frequency over time were separate dimensions that had different implications for future AUD.

Inevitably, this collection of papers also shows up the weaknesses in this area of research. The variability of measurement of drug use and misuse stands in contrast to the fairly standard methods now used to assess psychiatric disorders in community studies of children, adolescents, and young adults. This may be because most of these studies were funded as studies of psychiatric disorder, with drug abuse as a comorbid condition rather than the focus of attention. A consensus from the experts on the best instruments to use for studies of developmental comorbidity would be very helpful to us all. Second, future studies should not draw conclusions about psychiatric comorbidity until they have acknowledged and assessed the confounding role of conduct disorder. Third, future studies need to make allowance for the fact that the effect of CD on drug use and abuse changes over development, and may differ depending on whether the topic is the onset of use or the transition from use to abuse/dependence. It will also be important to bear in mind that not all CD children develop SUD, and not all young adults with SUD were conduct disordered as children. As Blozis et al. remind us, there are many different pathways through the minefield of adolescence. Further work on these data sets could help us to learn more about the important groups who develop SUD without conduct disorder, and those whose CD does not lead on to SUD. Armed with a better understanding of alternate developmental pathways we shall be in a better position to tailor prevention and intervention to individual needs.

References


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