



## THEME

Psychosis



### Brendan Pawsey

GradDip(Applied Psych), is a psychologist and Research Clinician, Collaborative Therapy Unit, Mental Health Research Institute of Victoria. [bpawsey@mhri.edu.au](mailto:bpawsey@mhri.edu.au)

### David Castle

MSc, MD, MRCPsych, FRANZCP, is Professor, Mental Health Research Institute of Victoria, and University of Melbourne, Victoria.

# Substance use and psychosis

## BACKGROUND

The use of alcohol and illicit substances is high among people with mental illnesses. Clinicians experience a range of complex issues while treating such patients.

## OBJECTIVE

This article provides a brief overview of the problem of substance abuse comorbidity in people with a major mental illness. It outlines some of the epidemiological and clinical issues related to the association between the use of alcohol and illicit substances and disorders such as schizophrenia, and suggests approaches to assessment and treatment of people with such dual problems.

## DISCUSSION

An integrated approach to treatment is required, whereby mental health and substance use issues are addressed simultaneously by the one treatment team. The general practitioner has an important role in psychoeducation, physical and mental health care, pharmacotherapy, and coordination of care.

**The use of alcohol and illicit substances by people with a mental illness is much higher than rates of use among the general population. For example, an Australian study found lifetime rates of alcohol abuse or dependence among people with schizophrenia and related disorders or bipolar disorder to be 36.3% for males and 15.7% for females (comparable 12 month general population estimates were 3.1% for males and 1.3% for females).<sup>1</sup> For illicit substances, rates were 38.7% for males and 17.0% for females (9.4% and 3.7% in the general population, respectively). Among illicit drugs, cannabis was the most commonly used followed by amphetamines. In a clinical sample of people with psychosis, Spencer et al<sup>2</sup> confirmed high rates of substance use, and also found that around half of patients were polydrug users (ie. using more than one drug of addiction). People attending services for alcohol and illicit substance use problems have elevated rates of mental illness (just over 50% compared with nonsubstance treatment attending adult population of 18.5%).<sup>3</sup>**

## Does substance use cause psychosis?

There is little doubt that illicit substances can cause psychotic symptoms. Indeed, it is the psychomimetic properties of these drugs that make them appealing. It

is also clear that some people are more vulnerable to the psychomimetic effects of drugs such as cannabis: therefore, if they have more 'psychosis proneness' (perhaps mediated by a genetic predisposition to an illness such as schizophrenia), they are more likely to experience severe psychotic symptoms on exposure to the drug, similar to a person with diabetes imbibing sugar and having a resultant very high serum glucose.<sup>4,5</sup>

In terms of people with an established psychotic illness, illicit substances tend to result in a worsening of psychotic symptoms, or can precipitate relapse. Research has shown that heavy use of psychotogenic drugs such as cannabis and cocaine correlates with a worse symptom profile.<sup>6</sup> A recent New Zealand study found that young people who used cannabis daily were between 2.3 and 3.3 times more likely to experience psychotic symptoms,<sup>7</sup> while increased hospitalisations are also apparent.<sup>8-10</sup>

A rather more contentious issue is whether drugs such as cannabis can actually cause schizophrenia. The best studies to test the causality hypothesis are cohort studies that follow up people who have used cannabis before becoming unwell and assess their risk of later schizophrenia compared to nonusers.<sup>11</sup> The original such study was a longitudinal follow up of Swedish conscripts that found that cannabis use at conscription (around age 17 years) was

associated with a later increased risk of schizophrenia (risk ratio 2.3). Despite methodological issues, this finding has been generally accepted and has recently been supported by further cohort studies from Israel, The Netherlands, and New Zealand.<sup>11</sup>

Clearly, however, cannabis consumption is not the only cause of schizophrenia, and the vast majority of people who do use cannabis do not develop the illness. Therefore, it can be thought of as a cumulative causal factor, acting in synergy with other factors (eg. genetic predisposition, early environmental insults) to result in the manifestation of schizophrenia in some people. It has been estimated that the population attributable factor is of the order of 5–8%. This number of ‘cases’ could be prevented if cannabis was eliminated altogether.<sup>12</sup>

### Associated problems and motivations for use

Apart from the direct negative effect of illicit substances on psychotic symptoms per se, there are an array of other medical and psychosocial issues impacted by substance use in people with disorders such as schizophrenia. Therefore, this group of people are susceptible to adverse physical health risks of a general nature, as well as elevated risk of hepatitis C and HIV/AIDS, mostly from unsafe injecting techniques.<sup>13</sup>

Dual diagnosis patients are also more likely to experience a range of related social and relational problems such as more criminality (including violence),<sup>10</sup> and homelessness,<sup>14,15</sup> an increased rate of suicide,<sup>16</sup> and poorer adherence to treatment<sup>9</sup> compared with individuals who experience one mental health disorder.

One obvious question to ask is why people with illnesses such as schizophrenia use substances at such high rates, despite the negative impact on their illness and their lives in general? It is widely assumed that people with mental illnesses use substances to ‘self medicate’ either their symptoms or the side effects of their prescribed medication. To test this hypothesis, Spencer et al interviewed 69 people with schizophrenia and related disorders about why they used alcohol and illicit substances.<sup>2</sup> On factor analysis of the results, the strongest factor (accounting for 37% of the variance) was ‘to deal with negative affect’, including items covering such motivations as dealing with boredom, depression, anxiety, and insomnia. A further robust but less powerful factor was ‘enhancement’ such as ‘to get high’ (10% of the variance). A social factor (eg. ‘because my friends do it’) accounted for 8% of the variance. Only 6% of the variance was due to self medication of positive symptoms such as hearing voices, or medication side effects.

The importance of understanding motivations for use among people with a mental illness lies in the potential

utility in both engagement and treatment. One is more likely to engage effectively if being seen to be trying to understand rather than simply condemning the substance use problem. Furthermore, dealing with the underlying motivators such as negative affect could conceivably reduce the drive for use: for example, effectively treating depression, providing an environment where there is daily structure and meaningful activities, and a ‘safe’ peer environment.

### Assessment

The process of assessment of the individual with substance use and mental illness needs to encompass both the substance use and mental health issues, as well as the broader psychosocial parameters outlined above. A full physical health check, including, where indicated, tests for hepatitis and HIV status, is required.

With respect to the substance use itself, an assessment of motivation to change is crucial, as this informs treatment. The ‘stages of change’ model is a useful one here, as it allows both the practitioner and the patient to move from problematic behaviour to healthy behaviour without failure attribution, and with lower physician frustration.<sup>17</sup>

Engagement is the key to treatment, as without an effective treatment alliance and accepted shared goals for patient and therapist, it is very difficult to begin meaningful treatment. Thorough assessment initially aids this process, while motivational interviewing encourages behaviour change by helping patients explore and resolve ambivalence.<sup>18</sup>

### Treatment

An integrated approach to the problem is required. The field has very much moved on from the notion of either sequential (ie. dealing with each problem in turn) or parallel (ie. different treatment agencies dealing with each problem separately) approaches. It is now generally accepted that the best strategy is that of integration, whereby both issues are addressed simultaneously, with the same personnel being involved. This is more efficient, and avoids problems of mixed messages and splitting. It also allows the patient to acquire and use strategies applicable across both domains to assist them with control of both substance use and mental health symptoms. Monitoring of both issues, and the high risk situations and triggers for substance use, as well as the consequences in terms of mood, can effectively be assessed in an ongoing manner by use of a daily diary.

### The role of the GP

People with mental illness do access their general practitioner; 80% of participants in an Australian study had

seen their GP in the previous year.<sup>1</sup> The GP is in a unique position as they can deal with mental health and physical health problems, remain an ally, and coordinate care. They play both a psychoeducational and pharmacological role. Crucial to this process is effective communication between service providers, patients, and, where relevant, their families. We have found the use of a collaborative process, including a patient held 'collaborative treatment journal' (CTJ) to be an effective tool.<sup>19</sup> The CTJ charts stresses, monitors substance use and medication adherence, documents mood fluctuation, and provides both patient and doctor with invaluable treatment planning information, especially when used following detailed assessment. Furthermore it can provide an excellent inter-service communication pathway.

Medication and substance interaction is important when considering pharmacological interventions and prescribing antipsychotics. Interactions between illicit substances and prescribed medications are many and varied, however some common ones are:

- alcohol worsening extrapyramidal side effects
- cannabis causing increased disorientation and marked hypotension, and
- stimulants interacting with antipsychotics by altering the pharmacological effects of the illicit substance, and thus the desired experience.<sup>20</sup>

General practitioners should also consider that many studies show that medication compliance is difficult to achieve in people with dual diagnosis,<sup>21</sup> with one study finding that substance abusing patients with schizophrenia were 13 times more likely than nonsubstance abusing patients to be noncompliant with antipsychotic medication.<sup>22</sup> Leo et al<sup>23</sup> outline some strategies that can support medication adherence such as ongoing illness education, rapidly addressing side effects, and assisting patients to develop medication taking routines.

Further and more specific information can be found by contacting the Psychotropic Drug Advisory Service (see *Resource*) or by consulting the *Clinical handbook of psychotropic drugs*.<sup>20</sup>

## Conclusion

General practitioners can play a vital role in the detection, assessment, and treatment of patients with comorbid substance use and mental illness. Adopting an integrated treatment approach that addresses both issues concurrently, through a process of collaboration, can provide constructive avenues to recovery and relapse prevention.

## Resource

Psychotropic Drug Advisory Service  
Mental Health Research Institute  
Locked Bag 11

Parkville Vic 3052  
Ph 03 9389 2920 Fax 03 9387 5061  
Email cculhane@mhri.edu.au  
Conflict of interest: none declared.

## References

1. Jablensky A, McGrath J, Herman H, et al. Psychotic disorders in urban areas: an overview of the study on low prevalence disorders. *Aust N Z J Psychiatry* 2000;34:221–36.
2. Spencer C, Castle D, Michie P. An examination of the validity of a motivational model for understanding substance use among individuals with psychotic disorders. *Schizophr Res* 2002;28:233–47.
3. Watkins E, Hunter S, Wenzel S, et al. Prevalence and characteristics of clients with co-occurring disorders in outpatient substance abuse treatment. *Am J Drug Alcohol Abuse* 2004;30:749–64.
4. Hall W, Degenhardt L. Is there a specific 'cannabis psychosis'? In: Castle D, Murray R, editors. *Marijuana and madness*. Cambridge: University Press, 2004;89–100.
5. Verdoux H. Cannabis and psychosis proneness. In: Castle D, Murray R, editors. *Marijuana and madness*. Cambridge: University Press, 2004;75–88.
6. Dixon L. Dual diagnosis of substance abuse in schizophrenia: prevalence and impact on outcomes. *Schizophr Res* 1999;35:93–100.
7. Fergusson DM, Horwood LJ, Ridder EM. Tests of causal linkages between cannabis use and psychotic symptoms. *Addiction* 2005;100:345–66.
8. Linszen DH, Dingemans PM, Lenoir ME, et al. Relapse criteria in schizophrenic disorders: different perspectives. *Psychiatry Res* 1994;54:273–81.
9. Drake RE, Osher FC, Wallach MA. Alcohol use and abuse in schizophrenia: a prospective community study. *J Nerv Ment Dis* 1989;177:408–14.
10. Cantor-Graae E, Nordstrom LG, McNeil TF. Substance abuse in schizophrenia: a review of the literature and study of correlates in Sweden. *Schizophr Res* 2001;48:69–82.
11. Arseneault L, Cannon M, Witton J, Murray R. Cannabis as a potential causal factor in schizophrenia. In: Castle D, Murray R, editors. *Marijuana and madness*. Cambridge: University Press, 2004;101–18.
12. Henquet C, Murray R, Linszen D, van Os J. The environment and schizophrenia: the role of cannabis use. *Schizophr Bull* 2005;31:608–12.
13. Carey MP, Weinhardt LS, Carey KB. Prevalence of infection with HIV among the seriously mentally ill: review of research and implications for practice. *Prof Psychol Res* 1995;26:262–8.
14. Ridgely MS, Glodman HH, Willenbring M. Barriers to the care of persons with dual diagnoses: Organisational and financing issues. *Schizophr Bull* 1990;16:123–32.
15. Drake RE, Osher FC, Wallach MA. Homelessness and dual diagnosis. *Am Psychol* 1991;46:1149–58.
16. Torrey WC, Drake RE, Bartels SJ. Suicide and persistent mental illness: a continual clinical and risk management challenge. In: Soreff SM editor. *Handbook for the treatment of the seriously mentally ill*. Hogrefe & Huber Publishers, 1996;295–313.
17. Zimmerman GL, Olsen CG, Bosworth MF. A 'stages of change' approach to helping patients change behaviour. *Am Fam Physician* 2000;61:1409–16.
18. Miller WR, Rollnick S. *Motivational interviewing: preparing people for change*. New York: Guilford Press, 2002.
19. Gilbert M, Miller K, Berk L, Ho V, Castle D. The scope for psychosocial treatments for psychosis: an overview of Collaborative Therapy. *Australas Psychiatry* 2003;11:220–4.
20. *Clinical handbook of psychotropic drugs*. 14th ed. Hogrefe & Huber Publishers, 2004.
21. Lacro J, Dunn LB, Dolder CR, et al. Prevalence of risk factors for medication nonadherence in patients with schizophrenia: a comprehensive review of recent literature. *J Clin Psychiatry* 2002;63:892–909.
22. Kashner TM, Rader LE, Rodell DE, et al. Family characteristics, substance abuse, and hospitalisation patterns of patients with schizophrenia. *Hosp Community Psychiatry* 1991;42:195–6.
23. Leo RJ, Jassal K, Bakhai Y. Nonadherence with psychopharmacologic treatment among psychiatric patients. *Primary Psychiatry* 2005;12:33–9.