

## GUEST EDITORIAL

# Illicit drug use and problematic use in the elderly: is there a case for concern?

### How common is illicit drug use and problematic use in the elderly?

Traditionally, the prevalence of illicit and problematic drug use in the elderly was thought to be very low (Abrams and Alexopoulos, 1988; Rosenberg, 1995; Crome and Day, 1999; Simoni-Wastila and Yang, 2006). Indeed, in the most recent British Crime Survey respondents over the age of 59 years were not asked about illicit drug use because previous surveys indicated that less than 1% of those aged 60 years and over had taken illicit drugs in their lifetime (personal communication, Home Office Direct Communications Unit, 2007). The vast majority of epidemiological studies of illicit drug use and problematic use in the elderly are from the U.S.A., although studies from other countries are emerging. These epidemiological studies have either been population-based or of convenience samples.

An American population-based study reported life-time prevalence of illicit and problematic drug use in men over the age of 65 years as 2.9% and 0.12% respectively (Anthony and Helzer, 1991); the corresponding figures for women were 0.7% and 0.06% respectively. These figures were considerably lower than those in younger age groups.

Another American population-based study reported the prevalence of problematic drug use in males and females over the age of 65 years at one of the three study sites as 0% and 0.2% respectively, and the prevalence was zero in both sexes at the other two sites (Myers *et al.*, 1984); however, data on illicit and licit drug problematic use were not reported separately. Other American studies, whilst reporting the prevalence of problematic drug use, failed to differentiate between alcohol and other substances or between illicit and licit drugs (Myers *et al.*, 1984; Burke *et al.*, 1990; Huang *et al.*, 2006). An Australian population-based study reported that 0.1% of females over the age of 65 years had drug-use disorder with opiates (Lynskey *et al.*, 2003); but this was not observed in elderly men, and there were no cases of drug use disorders due to stimulants and cannabis in the elderly in both sexes. Another Australian population-based study of illicit drug use reported that 3% and 0.5% of women over the age of 65 years used cannabis and barbiturates respectively (Hancock *et al.*, 1992); but there were no cases of use of amphetamines, hallucinogens, cocaine and opiates. The same study reported that 2.8% and 1% of men over the age of 65 years used cannabis and opiates; but there were no cases of use of amphetamines, hallucinogens and cocaine. The 2006/2007 British Crime Survey, using a representative samples of private households, reported the following in 50–59 year olds: 0.4%, 12.8% and 3.1% had ever used heroin,

First published online 17 April 2008.

cannabis and tranquillisers not prescribed by a doctor respectively; 0.1%, 1.1%, 0.2% and 0.1% had used amphetamines, cannabis, tranquillisers not prescribed by a doctor and amyl nitrite respectively in the last year; and, 0.6% and 0.1% had used cannabis and tranquillisers not prescribed by a doctor respectively in the last month (Murphy and Roe, 2007).

The prevalence, ascertained by self-reports and toxicology, of the use of marijuana, cocaine, opioids and stimulants in men over the age of 65 years attending emergency departments of hospitals in America were 2.4%, 1.9%, 11.6% and 6.7% respectively (Rockett *et al.*, 2006); the corresponding figures for women over the age of 65 years were 0.1%, 0%, 14.4% and 19.8%. The prevalence of cocaine use, measured by toxicology, in those over the age of 60 years attending emergency department of an American hospital was 2% (Rivers *et al.*, 2004); cocaine users had an average age of 66.4 years. In Americans over the age of 50 years presenting to the emergency department of a general hospital, the prevalence of illicit drug use was 3% (Schlaerth *et al.*, 2004); cocaine, opiates and marijuana were used by 63%, 16% and 14% of the elderly illicit drug users respectively.

The prevalence of combined alcohol, illicit and licit drug problematic use in American geriatric psychiatry inpatients was 21% (Whitcup and Miller, 1987). The prevalence of illicit drug problematic use, including crack cocaine, cocaine, cannabis, heroin and amphetamines in American veteran geriatric psychiatry inpatients was 1% (Edgell *et al.*, 2000). The prevalence of problematic use of cocaine/crack, marijuana, heroin and other opiates, hallucinogens and stimulants was 5.4%, 1.4%, 14.3%, 0.02% and 0.8% respectively among Americans over the age 55 years admitted to a substance abuse treatment service (Arndt *et al.*, 2005). The prevalence of the use of cocaine, heroin and marijuana was 10%, 8% and 2% respectively in Americans over the age of 60 years referred to a substance abuse consultation/liaison service (Weintraub *et al.*, 2002). Three percent of American intravenous heroin users over the age of 50 years also use crack cocaine, although this figure was lower than that in younger subjects (McBride *et al.*, 1992). Data from the National Drug Treatment Monitoring System in England indicated that 0.97% of patients in treatment were over the age of 55 years and their main problem drug was heroin (Department of Health and National Treatment Agency for Substance Misuse, 2004).

An American study of prisoners over the age of 55 years reported that 31% had illicit problematic drug use, 10% had a lifetime history of intravenous drug use, and the prevalence of problematic use due to cocaine/crack, marijuana and methamphetamine was 8%, 1.6% and 4.7% respectively (Arndt *et al.*, 2002). Data from the Prison Services's Counselling, Assessment, Referral, Advice and Thoroughcare Services in the U.K. indicated that 7% of their clients were aged 40–69 years (May, 2005).

Direct comparisons between studies are problematic because of differing samples, clinical or societal settings, definitions of older age groups (varying cut-off ages between 50 and 65 years have been used) and methods of case-ascertainment. Moreover, comparisons are further complicated because different studies have measured different parameters for prevalence (life-time, point and period prevalence) for illicit drug use and problematic use. Furthermore, some

studies have amalgamated drug use and problematic use for illicit and licit drugs. Also, other studies have failed to specify the precise illicit drugs studied. Nevertheless, in general, the prevalence of illicit drug use and problematic use in the elderly appears to be low relative to that in younger people (Hancock *et al.*, 1992; Arndt *et al.*, 2002; 2005; Rockett *et al.*, 2006).

### **Possible explanations for the low prevalence**

Several explanations have been advanced for the low prevalence of illicit drug use and problematic use in the elderly. First, cohort and cultural lack of involvement with illicit drugs and the acceptability of illicit drugs among the elderly may be an important factor (Glantz and Sloboda, 1995). Second, increased early mortality among illicit drug users, particularly opiate users, may result in fewer users reaching old age (Hser *et al.*, 1993; Glantz and Sloboda, 1995; Fingerhood, 2000; Lynskey *et al.*, 2003; Simoni-Wastila and Yang, 2006). Third, illicit drug users may mature out from using these drugs by the time they reach old age (Winick, 1962; 1964; Glantz and Sloboda, 1995; Simoni-Wastila and Yang, 2006). Finally, it is possible that the observed low prevalence may be due to under-identification of elderly illicit drug users (Patterson and Jeste, 1999).

There are many potential explanations for this under-identification. First, studies focusing on offenders may miss elderly illicit drug users as the elderly are less likely to be involved in criminal activities (Rosenberg, 1995). Second, elderly illicit drug users may not be visible on the street drug scene (Atkinson and Kofoed, 1982; Abrams and Alexopoulos, 1988; Rosenberg, 1995), and may deploy others, such as family members, to obtain their drugs (Rosenberg, 1995). Third, American methadone treatment programs have traditionally excluded those over the age of 40 years (Simoni-Wastila and Yang, 2006). Fourth, decline in social function due to illicit drug use in the elderly may not be identified by others, such as family members or employers, as the elderly may live alone and be retired (Atkinson and Kofoed, 1982). For example, negative consequences of illicit drug use which indicate problems in younger age groups including poor occupational functioning cannot be observed in the elderly because of retirement. Similarly, family difficulties as a consequence of illicit drug use may be less of an issue in the elderly (McMahon, 1993). Fifth, assessment methods developed for use in younger individuals may not be applicable to the elderly (Patterson and Jeste, 1999; Lynskey *et al.*, 2003) because cognitive impairment can bias self-reports of illicit drug use (Rockett *et al.*, 2006), and evidence of social decline as a diagnostic criteria may be difficult to establish in the elderly. Sixth, classic signs and symptoms of intoxication and dependence may be less prevalent in the elderly (Atkinson and Kofoed, 1982). Seventh, signs and symptoms of illicit drug use disorders may mimic those of physical disorders, including myocardial infarction, hypertensive emergencies, encephalopathy and infection (Whitcup and Miller, 1987; McMahon, 1993; Lynskey *et al.*, 2003), and psychiatric disorders, including sexual dysfunction, depression and dementia (Atkinson and Kofoed, 1982; McMahon, 1993). Eighth, bias of clinicians (Atkinson and Kofoed, 1982), including reluctance to record diagnosis of problematic illicit drug use

in the case-notes of elderly patients (Whitcup and Miller, 1987), may also lead to under-reporting. Also, clinicians may not think or be reluctant to ask elderly people about illicit drug use because of the erroneous assumption that the elderly do not use illicit drugs. Finally, the elderly may be unaware that they are using an illicit drug when they use prescribed drugs (like opiates) for reasons other than those for which the prescription was given (Rockett *et al.*, 2006). Also, the increasing emphasis on research pertaining to use and problematic use of prescribed medications and “over the counter” medications in the elderly has diluted similar research for illicit drugs.

### **Correlates and potential risk factors**

Existing studies have suggested a number of factors that are associated with the use of illicit drugs in the elderly: being male (Rivers *et al.*, 2004); “young-old” age group (Rivers *et al.*, 2004); belonging to the postwar cohort (Johnson and Gerstein, 1998); being African American (Edgell *et al.*, 2000); offender status (Arndt *et al.*, 2002); diagnosis of mental illness (Prigerson *et al.*, 2001); concomitant alcohol misuse (Rivers *et al.*, 2004); and, serious medical illnesses (Whitcup and Miller, 1987; Moos *et al.*, 1993; Weintraub *et al.*, 2002; Schlaerth *et al.*, 2004), at times needing medical admission (Whitcup and Miller, 1987). Also, most elderly illicit drug users had their first exposure to illicit drugs in young adulthood (Anthony and Helzer, 1991; Johnson and Gerstein, 1998; Arndt *et al.*, 2002; 2005). Age of onset of drug use or drug-related problems was rare after the age of 25–30 years (Anthony and Helzer, 1991; Arndt *et al.*, 2005). This suggests that those with a past history of illicit drug use are at increased risk of illicit drug use in old age and elderly illicit drug users may have a long history of such use.

### **Service use, outcome and prognosis**

Elderly subjects with a dual diagnosis of a mixed group of substance abuse disorders and mental illness, compared to those without a dual diagnosis, received more treatment during and following the index episode (Moos *et al.*, 1994a), had a greater number of outpatient visits for substance abuse issues (Prigerson *et al.*, 2001) and had a longer length of inpatient stay (Prigerson *et al.*, 2001). However, compared to younger such inpatients, elderly substance abuse inpatients received less outpatient follow-up and had higher rates of readmission at one-year follow-up (Moos *et al.*, 1994a); unmarried status predicted readmission rates. Compared to younger patients, elderly patients with a mixed group of substance use disorders were more likely to have a substance abstinence goal, remain longer in treatment, and were more likely to be abstinent at six months post-treatment follow-up (Satre *et al.*, 2003). Elderly patients with a mixed group of substance use disorders, compared to younger patients, at the five-year follow-up, remained longer in treatment, had fewer close family and friends who encouraged substance use and were more likely to remain abstinent

(Satre *et al.*, 2004); longer duration in treatment, absence of close relatives or friends who encouraged substance use and being female predicted better outcome (Satre *et al.*, 2004). Elderly illicit drug users are at high risk of having medical illnesses (Whitcup and Miller, 1987; Moos *et al.*, 1993; Weintraub *et al.*, 2002; Schlaerth *et al.*, 2004), and elderly illicit drug users on geriatric psychiatry wards are at high risk of requiring transfer to medical wards (Whitcup and Miller, 1987). Mortality among elderly inpatients, with a mixed group of substance abuse disorders, was 2.64 times higher than expected at four-year follow-up after the index episode (Moos *et al.*, 1994b). This increased mortality was predicted by older age, not being married, presence of medical illnesses and severity of the index episode (Moos *et al.*, 1994b).

These findings collectively suggest that elderly illicit drug users place a high demand on services. However, in general, they have a good response to treatment compared to younger patients. Nevertheless, their prognosis is poor with increased medical morbidity and mortality.

### **Scale of the problem**

The elderly population is rapidly increasing throughout the world due to increased life expectancy and reduced birth rates (Shah and MacKenzie, 2007). Therefore, even for disorders with a low prevalence, including illicit drug use and problematic use in the elderly, the absolute number of elderly individuals with such disorders will increase. Statistical modeling techniques have predicted a significant increase in the number of elderly with illicit drug-use disorders in the U.S.A. as the cohort of “baby boomers” increases in age in future years (Gfroerer *et al.*, 2003; Colliver *et al.*, 2006). The number of people over the age of 50 years using cannabis is predicted to increase from 719,000 in 1999/2001 to 3.3 million in 2020 in the U.S.A. (Colliver *et al.*, 2006); the corresponding figures for any illicit drug use are an increase from 1.6 million to 3.5 million. The number of elderly in need of treatment for substance abuse (defined as alcohol or illicit drug-use disorder) is predicted to increase from 1.7 million in 2000/2001 to 4.4 million in 2020 in the U.S.A. (Gfroerer *et al.*, 2003). This predicted increase is likely to place a huge demand on both old age psychiatry and substance misuse services over the next two decades (Patterson and Jeste, 1999; Gfroerer *et al.*, 2003; Colliver *et al.*, 2006), particularly because the prevalence estimates may be lower due to methodological problems.

The vast majority of epidemiological studies and the two studies predicting a substantial increase in elderly illicit drug users are from the U.S.A. Findings from the U.S.A. cannot be assumed to apply to other countries. However, in the absence of epidemiological data from other countries, it may be possible to speculate that the scale of the problem may be similar in other developed countries; support for this speculative assumption is provided by the prevalence of other psychiatric disorders in old age, including dementia and depression (the two most prevalent psychiatric disorders in old age), which are similar in most Western countries, including the U.S.A.

## A way forward

The potential for a substantive increase in the number of elderly illicit drug users, increased rates of medical morbidity and mortality in this group and a high demand on services, coupled with evidence of good response to treatment, suggests a need for improved investment in research and service development for this group. Epidemiological studies are urgently needed to ascertain prevalence and risk factors. However, such studies, in order to be accurate, require support by developing screening and diagnostic instruments appropriate for the elderly, and by greater use of toxicological screening. Epidemiological studies should also be followed by intervention studies to identify effective treatments in the elderly; it should not be assumed that treatments evaluated in younger age groups will be equally effective in the elderly (King *et al.*, 1994). It is encouraging that the CAGE questionnaire has been successfully adapted and evaluated for use in the screening of illicit drug use in the elderly (Hinkin *et al.*, 2001). Also, intervention studies pertaining to illicit drug use in the elderly are emerging (Oslin, 2005). For example, cognitive behavior therapy has been shown to be effective in older substance users (Schonfeld *et al.*, 2000).

The existing literature, as described above in the section on “Correlates and risk factors”, suggests that some elderly groups are at higher risk of illicit drug use. Therefore, clinicians working with the elderly in a variety of settings including primary care, geriatric medicine, old age psychiatry, substance misuse service, prison healthcare and social services should maintain a high vigilance when working with the elderly from these groups. Higher vigilance should also be maintained in patients with atypical presentations of mental illnesses and physical illnesses, and in those who do not respond to conventional treatments for their illnesses. This high vigilance among clinicians will require support from policy-makers to invest in developing age-sensitive substance misuse services to meet the emerging challenges. Moreover, a number of commentaries on the clinical management and service development pertaining to the elderly with illicit drug use problems are available (e.g. King *et al.*, 1994; Crome and Day, 1999; Menninger, 2002).

Without this two-pronged approach of investment in research and service development a new generation of elderly illicit drug users may continue to suffer in silence.

## Conflict of interest declaration

Jane Fountain is a consultant for drug-related national and international organizations, including the U.K. Drug Policy Commission; Correlation (European network on social inclusion and health); Council of Europe, Pompidou Group; European Monitoring Centre for Drugs and Drug Addiction (EMCDDA); European Society for Social Drug Research; International Conference on the Reduction of Drug Related Harm; United Nations Office on Drugs and Crime (UNODC). She is an assistant editor for *Addiction* and an editorial board member of *Drugs and Alcohol Today*.

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