

Hidden psychiatric morbidity in elderly prisoners

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Background The number of elderly prisoners has increased significantly in Western countries over the past decade. Little is known about the psychiatric morbidity of this population.

Aims To determine the prevalence of psychiatric morbidity in elderly sentenced prisoners.

Method A stratified sample of 203 male sentenced prisoners aged over 59 years, from 15 prisons in England and Wales, representing one in five men in this age group, was interviewed using semi-structured standardised instruments for psychiatric illness and personality disorder.

Results More than half of the elderly prisoners had a psychiatric diagnosis. The most common diagnoses were personality disorder and depressive illness.

Conclusions The prevalence of depressive illness was five times greater than that found in other studies of younger adult prisoners and elderly people in the community. Underdetected, undertreated depressive illness in elderly prisoners is an increasing public health problem.

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The number of elderly prisoners is increasing. In England and Wales, the number of sentenced men aged 60 years and over more than trebled to 1055 in the decade 1988–1998, and the proportion of elderly prisoners in the total sentenced male population more than doubled to 1.7% (prison statistics obtained on personal request from the Prison Research and Statistics Group, Research, Development and Statistics Directorate, Home Office, London). There is a similar trend in the USA, where there are about 43 000 sentenced men over 55 years old in prison (US Department of Justice, 1997). We are not aware of any research on the prevalence of psychiatric morbidity in elderly sentenced prisoners. Studies at other stages of the criminal justice system indicate that rates of mental illness, particularly dementia, are likely to be high in this group (Barak *et al*, 1995; Needham-Bennett *et al*, 1996). A retrospective case-note study of remand prisoners found that 11/20 (55%) of those over the age of 65 years had symptoms of psychiatric disorder (Taylor & Parrott, 1988). Epidemiological surveys of community-dwelling elderly people report that around 10% have a psychiatric illness and 5–10% have dementia (Saunders *et al*, 1993). Although investigations of sentenced prisoners have excluded those aged over 65 years from their samples (Gunn *et al*, 1990; Singleton *et al*, 1998), it might be predicted from such studies and from community surveys that psychiatric morbidity would be high in elderly prisoners. The aim of the study reported here was to determine the prevalence of psychiatric disorder in sentenced male prisoners aged 60 years and over.

METHOD

Prison and prisoners

Men 60 years and older are scattered widely across more than 90 institutions in

England and Wales. We selected prisons that were within 160 kilometres (100 miles) of Oxford and held at least 10 elderly prisoners. Fifteen prisons met these criteria, and the elderly prisoners inside them were representative of all elderly inmates in terms of time served, offence category and type of prison. All sentenced inmates in these prisons aged 60 years and over were approached, and informed that the survey was confidential and voluntary. Written consent was obtained before the interview. Interviews were conducted in private within the prison between April 1999 and March 2000 by a specialist registrar psychiatrist, S. F., who had received training in the use of the diagnostic instruments administered. The interviewer was blind to diagnoses recorded in the medical notes and to the index offence when administering these instruments. The project was approved by the Prison Health Service Research Ethics Committee, at the Home Office, London, UK.

Instruments

The following standardised instruments were used.

- (i) The Geriatric Mental State (GMS) schedule is a semi-structured clinical interview designed to assess the mental state of the elderly in the community. The computerised diagnostic schedule that processes GMS data (AGECAT) reduces unreliability, supports diagnoses of a wide range of disorders and has been shown to accord with the diagnoses made by experienced psychiatrists (Copeland *et al*, 1988). Cases of organic disorder and depression generated by GMS-AGECAT correlate well with DSM-III diagnoses of dementia, and combined major depression, dysthymia and adjustment disorder, respectively (American Psychiatric Association, 1980; Copeland, 1990; Ames *et al*, 1994). Data on mood disorders in this study were converted to DSM-IV criteria for major depressive episode (American Psychiatric Association, 1994) using a standard algorithm at the University of Liverpool's Institute for Human Ageing.
- (ii) The Structured Clinical Interview for DSM-IV Axis II personality disorders (SCID-II) was administered after the GMS (First *et al*, 1997).

This covers each personality disorder category in turn; within categories, each component is evaluated by a specified question (or questions) and subsequent probes. It is one of the few personality interviews that have been used in published studies in a range of research centres. This measure has the advantages that it was developed to assess DSM criteria and can usually be completed in under 60 minutes, unlike other instruments which take considerably longer (Zimmerman, 1994). The screening questionnaire was omitted because it leads to a considerable number of false positives (Coid, 1993). Two categories of personality disorder, depressive and passive-aggressive, which are omitted from the formal version of the DSM-IV, were not assessed in the study reported here.

After the interview, each individual's medical records and reception health screen data were studied for major illness and current medication, and criminological information was gathered from the local prison database. Monthly meetings were held with a steering committee of senior academic psychiatrists (R.J. and T.H.), where diagnostic issues were reviewed.

Statistical analysis

Data were entered into the Statistical Package for the Social Sciences (SPSS, 1998), which generated descriptive statistics and relative risks. The test for independent proportions was used to compare characteristics of consenters with non-consenters, and participants in this study with the total population of elderly men in prison.

RESULTS

In total 233 men were approached, of whom 203 were interviewed, representing 19.2% of the sentenced population of men aged 60 and over. The 30 men who refused consent did not differ significantly from those who gave consent with regard to age (65.6 (s.d. 4.8) years *v.* 65.5 (s.d. 4.8) years) or past psychiatric history (40% *v.* 48%), but had been in prison longer (median 59 months *v.* 16 months, $z=3.40$, $P<0.001$). The mean age of the

Table 1 Comparison of sample to total population of sentenced men aged 60 years and over in prison

| Variable | Total male prisoners aged 60 and over | | Sample of 203 prisoners aged 60 and over | |
|------------------------|---------------------------------------|----------------|--|------|
| | <i>n</i> | % ¹ | <i>n</i> | % |
| Time served | | | | |
| Short (0–47 months) | 717 | 72.4 | 148 | 72.9 |
| Medium (48–119 months) | 132 | 13.3 | 22 | 10.8 |
| Long (> 120 months) | 142 | 14.3 | 33 | 16.3 |
| Type of prison | | | | |
| Local | 381 | 36.5 | 76 | 37.4 |
| Training | 485 | 46.5 | 103 | 50.7 |
| Open | 84 | 8.1 | 11 | 5.4 |
| Dispersal | 93 | 8.9 | 13 | 6.4 |
| Current offence | | | | |
| Sexual | 483 | 48.8 | 101 | 49.8 |
| Violence | 214 | 21.6 | 50 | 24.6 |
| Drugs | 109 | 11.0 | 29 | 14.3 |
| Fraud | 32 | 3.2 | 5 | 2.5 |
| Robbery and burglary | 31 | 3.1 | 4 | 2.0 |
| Theft | 30 | 3.0 | 7 | 3.4 |
| Other | 59 | 6.0 | 7 | 3.4 |
| Not recorded | 32 | 3.2 | 0 | 0 |
| Ethnic origin | | | | |
| Non-White | 104 | 10.1 | 24 | 11.8 |

1. Denominator is 1043, apart from length of sentence and current offence, where information is available on 991 prisoners.

subjects interviewed was 65.5 (range 60–88, s.d. 4.8) years compared with a mean age of 64.9 (s.d. 4.8) years for the total population of sentenced men aged 60 years and over. Twenty-eight men were aged 70 and over, and four were in their eighties. The characteristics of the sampled population were not significantly different from those of the total population of sentenced men aged 60 years and over in prison (Table 1, *P* values not shown).

Psychiatric illness according to the GMS-AGECAT was diagnosed in 64 men (31.5%, 95% confidence interval 25.1–37.9%) (Table 2). The most common diagnosis was depressive disorder, which was found in 60 individuals (29.6%, 95% CI 23.3–35.9%). Of these, 7 (11.7%) were being treated with antidepressant medication at the time of the interview, and 24 (40.0%) had a past or present history of depression noted in their medical records. Altogether, 156 (76.8%) men were taking prescribed medication of some kind. The two men with dementia experienced its onset while in prison.

Table 2 Prevalence of psychiatric morbidity in 203 male prisoners aged 60 years and over

| Diagnosis | <i>n</i> (%) of prisoners |
|-------------------------------------|---------------------------|
| Psychoses | |
| Depressive | 9 (4.4) |
| Other | 1 (0.5) |
| Total | 10 (4.9) |
| Neuroses | |
| Depressive | 51 (25.1) |
| Hypochondriasis | 1 (0.5) |
| Total | 52 (25.6) |
| Organic disorders | |
| Dementia | 2 (1.0) |
| DSM-IV major depressive episode | 15 (7.4) |
| DSM-IV personality disorder | |
| Antisocial personality disorder | 17 (8.3) |
| Any personality disorder | 61 (30.0) |
| Current substance misuse/dependence | 10 (4.9) |
| Total¹ | 108 (53.2) |

1. Total is less than the sum of individual disorders because some prisoners had more than one disorder.

Personality disorder

Personality disorder was diagnosed using the SCID-II in 61 men (30.0%, 95% CI 23.7–36.3%) (Table 3). There was comorbid personality disorder and GMS-AGECAT psychiatric illness in 19 individuals (9.4%). Prisoners were interviewed about their history of substance misuse in the preceding month, using the questions in the GMS. Overall, 10 prisoners (4.9%) reported current substance misuse or dependence: 6 misused alcohol and 4 misused drugs. A lifetime history of alcohol misuse was documented in the medical records of 23 prisoners (11.3%), with comorbid drug misuse in one case. There was one documented case of learning disability (of moderate severity). There was comorbidity of substance misuse or dependence with personality disorder or psychiatric illness in eight cases. Therefore, in total, 108 men (53.2%, 95% CI 46.3–60.1%) were given a psychiatric diagnosis.

Risk factors for depression

Risk factors for depressive illness were explored. The risk of being diagnosed with depression at interview was greater both in those with a past history of psychiatric illness (relative risk 2.2, 95% CI 1.2–4.3) and in those with bad or very bad self-reported general health (RR=2.1, 95% CI 1.1–3.8). The following were not associated

with an increased risk of being assigned a diagnosis of depression: present conviction for a sexual offence (RR=1.0, 95% CI 0.5–1.8); present conviction for murder (RR=1.2, 95% CI 0.6–2.6); being currently widowed, divorced or separated (RR=0.9, 95% CI 0.5–1.7); paid employment at the time of the offence (RR=0.7, 95% CI 0.4–1.4); having a comorbid personality disorder (RR=1.0, 95% CI 0.5–2.0); age at interview (aged 60–69 years, RR=1.3, 95% CI 0.5–3.0; aged 70–79 years, RR=1.0, 95% CI 0.4–2.4; aged 80 years or more, RR=1.0, 95% CI 0.9–1.0); or the length of time spent in prison (less than 12 months, RR=0.7, 95% CI 0.4–1.3; 12–47 months, RR=1.0, 95% CI 0.5–1.9; 48–119 months, RR=0.5, 95% CI 0.2–1.6; 120 months or over, RR=0.9, 95% CI 0.4–2.1).

DISCUSSION

Our main findings were that 32% (95% CI 26–38%) of our sample of sentenced elderly prisoners had a diagnosis of psychiatric illness using GMS-AGECAT, and 30% (24–36%) had a diagnosis of personality disorder using the SCID-II. In total, 53% (46–60%) of the sample had a psychiatric diagnosis. The rate of depression in this study, 30% (23–36%), was higher than the rates found in studies of younger adult prisoners and community studies of the elderly in the UK. A sub-analysis of 103 men aged 45–65 years in a larger study of prisoners found that 6% had a depressive illness (Singleton *et al*, 1998), and another study of 95 sentenced male prisoners aged 50–72 years reported that 10.5% had a current major depressive episode (Koenig *et al*, 1995). A community study of 468 men aged 65–69 years using the GMS found that 6% had a depressive illness (4.6% with depressive neurosis, and 1.7% with depressive psychosis) (Saunders *et al*, 1993). Using DSM-IV criteria, 7.4% were diagnosed as having a depressive episode in this study. This compares with studies of major depression in the community using DSM criteria, which find prevalence rates between 0.4% and 3.7% (Beekman *et al*, 1999). How do GMS and DSM criteria, of depression compare? It has been argued that the GMS, which has been validated using psychiatrists' judgements of what constitutes a case of depression for intervention, is more clinically useful; but the

DSM major depression, being a more exclusive diagnosis, is valuable for types of research requiring unambiguous examples of illness (Copeland, 1999).

Service implications

Five per cent of the elderly prison population represents a large number of inmates with psychosis, more than the prevalence of psychosis in some other surveys of younger sentenced male prisoners, such as the 2% reported in the largest study in England and Wales (Gunn *et al*, 1990). If the sample described in this investigation were to be extrapolated to the total elderly prison population, at any one time in prisons in England and Wales 52 (95% CI 21–83) elderly sentenced men would be psychotic, most with a depressive psychosis. Most psychiatrists would wish to see these individuals moved to a specialist treatment centre. Similarly, 312 (95% CI 243–380) elderly inmates of English and Welsh prisons would be depressed. We found that only 12% of the depressed prisoners were being treated with antidepressants, which suggests that there are large unmet treatment needs. This situation appears to be worse than that reported in an earlier study of younger sentenced prisoners in England and Wales: 27% of those diagnosed with neurosis were receiving treatment (Gunn *et al*, 1990). We also found that three-quarters of our sample were being prescribed medication, and elderly prisoners were therefore in regular contact with prison doctors for their physical health needs. These contacts should provide ample opportunity for assessment and treatment of psychiatric illness.

Personality disorder

The rates of personality disorder in this study fall between those found in younger adult prisoners and estimates in community samples. The SCID-II has been used to diagnose personality disorders in sentenced men in England and Wales: 64% of sentenced men aged 18–65 years had a personality disorder, and 23% had an antisocial personality disorder in the age group 45–65 years (Singleton *et al*, 1998), in comparison with 30% with personality disorder and 8% with antisocial personality disorder in this study. Little is known about personality disorders in old age community settings, but one meta-analysis in the over-50 age group found community rates

Table 3 Prevalence of personality disorder diagnosed with SCID-II in elderly prisoners

| Personality disorder | n (%) of prisoners |
|--------------------------|--------------------|
| Mixed | 14 (6.9) |
| Cluster A | |
| Paranoid | 7 (3.4) |
| Schizoid | 13 (6.4) |
| Cluster B | |
| Antisocial | 17 (8.3) |
| Cluster C | |
| Obsessive–compulsive | 16 (7.9) |
| Avoidant | 17 (8.3) |
| Not otherwise specified | 5 (2.5) |
| Total¹ | 61 (30.0) |

SCID-II, Structured Clinical Interview for DSM-IV Axis II personality disorders.

1. Total is less than the sum of individual disorders because some prisoners had more than one disorder.

of around 10% with personality disorder (Abrams & Horowitz, 1996). The Epidemiologic Catchment Area study included 2106 community-dwelling elderly people, of whom 0.2–0.8% were diagnosed as having antisocial personality disorder (Robins *et al*, 1984).

Dementia

Community rates of GMS dementia in men aged 65–69 years are 1.3–1.4% (Medical Research Council Cognitive Function and Ageing Study, 1998), similar to the low rate of dementia in this study (1%). This is considerably lower than the rates found in studies of elderly offenders at other stages of the criminal justice system. We suggest two main reasons for this. Those arrested who show signs of dementia are successfully diverted before sentencing. In addition, it is likely that prisoners are a selected population, in that those with dementia do not have the capacity to commit some of the types of serious crime for which people are imprisoned.

Risk factors for depression

We found that the relative risk for depression was increased in prisoners with a past psychiatric history, and in those with poor self-reported physical health. A study of younger adult prisoners showed that the risk of neurotic disorders was increased in those who were economically inactive at the time of their offence and in those who had spent less time in prison (Singleton *et al*, 1998). In contrast, we found no relationship between having a diagnosis of depression and paid employment at the time of the index offence or the length of time spent in prison. Studies of younger prisoners have not explored the association between physical illness and depression. However, a large community study of elderly individuals with GMS-related depression found that physical illness at the time of interview was predictive of depression, as was being widowed, divorced or separated (Copeland *et al*, 1999).

Methodological issues

Although the instruments we used allow valuable comparisons to be made, they have limitations. Psychiatric illness in the elderly is ideally diagnosed using an informant in addition to a clinical interview, although there is no study that has shown that personality disorder diagnoses based

CLINICAL IMPLICATIONS

- There are high rates of hidden severe psychiatric morbidity in elderly sentenced prisoners.
- Thirty per cent of elderly prisoners have a clinical depression. Only 12% of the depressed prisoners in this study were on antidepressant medication.
- Extrapolating the findings of this study to all elderly prisoners, about 50 elderly sentenced men are psychotic at any one time in English and Welsh prisons.

LIMITATIONS

- Informants were not used to aid in the diagnosis of psychiatric illness or personality disorder.
- Of those approached, 15% did not consent, and these inmates had spent more time in custody.
- This study did not estimate lifetime diagnoses of alcohol or substance misuse/dependence.

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on informant information are more valid than those based on patient interview alone (Skodol, 1997). The GMS has not been used in prison settings, and does not give lifetime diagnoses of substance dependence or misuse, or assess learning disability.

The difficulties in diagnosing depression in the elderly are compounded by problems in the prison system, including lack of resources, training of medical and nursing staff, the security-dominated culture of prisons and sentencing policy. However, on the grounds of human rights and public health, it is important that the high rates of psychiatric morbidity, particularly depression, be recognised and that systems be put in place for its detection and treatment. Virtually every elderly prisoner will eventually be released, and a clearer understanding of their health care needs is necessary to plan community treatment and support. The greying of the prison population is an international trend and it is likely that developments in Britain will have wide application.

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