A cross-sectional prevalence survey of psychotropic medication prescribing patterns in prisons in England

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Scientific summary

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Background

It is well established that the prevalence of mental illness is significantly higher among prisoners than among people in the wider community. Consequently, there is a high level of need for mental health treatment in prisons, including access to appropriate psychotropic medicines. Internationally, studies have shown that prescriptions for psychotropic medicines, such as antidepressants and antipsychotics, are elevated in incarcerated populations in comparison with the community and, furthermore, vary among different demographic groups. However, few studies to date have included formal and robust comparisons with the wider community or considered the appropriateness of prescribing.

Psychotropic prescribing in prisons is a complex and controversial area. Historically, prisoners and patient pressure groups claimed that drugs were prescribed in prisons for disciplinary, rather than clinical, reasons to control difficult individuals. More recently, questions have been raised regarding the equity, continuity and appropriateness of prescribing for mentally ill prisoners. In qualitative studies, patients have commonly reported difficulties in accessing prescribed psychotropic medications on entry to prison, causing significant frustration and distress. Staff working in prisons have raised concerns that psychotropic medicines can be illicitly traded or sought for their euphoric, anxiolytic or sedative, rather than therapeutic, effects.

In the UK, high-quality, robust, prescribing data are not routinely available from prisons, yet they are essential to managing the overall clinically appropriate, cost-effective and safe use of psychotropic medicines. A large survey of psychiatric morbidity among prisoners in England and Wales carried out in 1997 by the Office for National Statistics found that one-fifth of men and half of women interviewed were prescribed medication acting on the central nervous system (CNS), including drugs to treat mental health disorders and substance dependence. However, since this research was conducted, the prison population has significantly increased, major organisational changes to the delivery of prison-based health care have occurred and numerous new psychotropic drugs have entered the market. In a thematic report on mental health, the Chief Inspector of Prisons expressed concern that psychotropic medicines may be overused in prisons and recommended that the situation be clarified.

We designed a study to examine the prevalence, appropriateness and acceptability of psychotropic prescribing in prison to further our understanding of this important and multifaceted area of clinical practice.

Research questions

1. What are the patterns of psychotropic medication prescribing in prisons in England and Wales, and how do these compare with those in the wider community?
2. How appropriately are psychotropic medications prescribed in prisons?
3. How acceptable are psychotropic medication prescribing decisions to patients and general practitioners (GPs) in prisons?

Objectives

1. To establish rates of prescribing for psychotropic medications (antidepressants, antipsychotics, hypnotic/anxiolytics and/or CNS stimulants) in prisons in England and Wales with respect to (a) medication type, (b) dose and (c) cost.
2. To compare prison psychotropic prescribing patterns with those in the wider community, accounting for demographic and clinical characteristics.
3. To compare prescribing patterns between different prison types and specific demographic groups.
4. To determine the appropriateness of psychotropic prescribing patterns in prisons.
5. To determine the perceived satisfaction and acceptability of psychotropic prescribing decisions to patients and GPs in prisons.

Methods

The study combined two elements: (1) a prevalence survey of psychotropic prescribing patterns, using a cross-sectional design, and (2) an acceptability study to determine expectations and levels of satisfaction with prescribing decisions among patients and GPs in prisons.

Cross-sectional survey

A cross-sectional prevalence survey was designed to establish rates of psychotropic prescribing in England and Wales. Eleven prisons were selected to represent a range of prisoner populations, including adults, young offenders (aged 18–21 years), and sentenced and unconvicted prisoners. Individuals aged < 18 years were excluded, as prescribing guidelines differ for children and young people. In total, 6052 men and 785 women were surveyed; this represented approximately 8% of the male and 20% of the female prison population of England and Wales.

On census days at participating prisons (from November 2012 to July 2013), electronic clinical database management systems or clinical records (if prescribing was recorded manually) were searched to identify all patients with a current, valid prescription for at least one psychotropic medication. For the purposes of this study, psychotropic medication was defined as any medication listed in subchapters 4.1–4.4 of the *British National Formulary* (BNF; 2010) which covers hypnotic and anxiolytic (4.1), antipsychotic and antimanic (4.2), antidepressant (4.3) and stimulant (4.4) medications. For each patient in receipt of prescribed psychotropic medication(s), we extracted anonymised demographic and prescription-related data from individual clinical records.

The prescribing appropriateness indicator (PAI) was used to determine appropriateness. The PAI is a standardised, validated tool comprising a set of explicit indicators designed for use against prescribing data held in medical records. The PAI was completed for each individual prescription for psychotropic medication.

For comparison purposes, we used an existing data set on a sample of community patients, previously obtained from the Clinical Practice Research Datalink (CPRD). CPRD collects data on more than 5 million patients from 625 primary care practices in England and Wales, covering approximately 8% of the population. All CPRD patients who were (a) alive, (b) aged ≥ 18 years and (c) registered with a GP in England and Wales from 1 February to 30 July 2010 were eligible for inclusion in the study. CPRD supplied equivalent, anonymised individual-level data for a random sample of 30,602 patients who met these inclusion criteria and were in receipt of at least one prescribed psychotropic medication on our chosen census date of 30 July 2010.

The CPRD and each participating prison provided total population counts, stratified by age and sex, for use as denominators. These data, in combination with individual-level data on individuals prescribed psychotropic medicines, enabled us to calculate prescribing prevalence rates. Prescribing rates and 95% confidence intervals (CIs) were calculated for each prison and for GP-registered community patients, stratified by drug type (BNF subchapter) and sex. Prevalence ratios were also generated to compare prescribing rates between prisons and the community. Descriptive statistics were used to determine the proportion of prescriptions which met the indicators on the PAI. Psychotropic prescribing costs (per patient per month) were estimated using prices listed in the BNF.

Acceptability study

Questionnaires were used to determine the acceptability of prescribing to patients and doctors at three prisons: a local prison, a training prison and a women's prison. All three prisons had also taken part in the cross-sectional survey. Researchers visited primary care clinics over the period July to October 2013 and approached patients to participate in the study. A sample of 156 patients and their doctors ($n = 6$) were recruited. Recruited patients were asked to complete pre-and post-consultation questionnaires, either themselves or as a structured interview if preferred/indicated (e.g. in cases where a participant had literacy problems). Pre-consultation patient questionnaires asked patients to state their primary reason for consulting the GP and required them to rate their expectations and desired outcomes on a three-point Likert scale (agree, uncertain, disagree). Post-consultation patient questionnaires measured perceived acceptability of the actual outcomes achieved (on the same three-point Likert scale) and satisfaction with prescribing. Doctors were asked to complete a post-consultation questionnaire for each patient participant, including details of drugs prescribed, indications and perceived pressure to prescribe.

Results

Cross-sectional prevalence survey

Overall, 17% of men and 48% of women in prison were prescribed at least one psychotropic medicine. After adjusting for age differences, psychotropic prescribing rates were four times higher among men [prevalence ratio (PR) 4.02 95% CI 3.75 to 4.30] and almost six times higher among women (PR 5.95, 95% CI 5.36 to 6.61) than among patients in the community. Antidepressants were the most commonly prescribed psychotropic medication, prescribed to 13% of men and 41% of women in prison.

Several sex differences were observed. Women in prison were nearly three times more likely than men in prison to be prescribed psychotropic medication (PR 2.65, 95% CI 2.35 to 2.99). In particular, women were relatively more likely to be prescribed hypnotic and anxiolytic drugs (PR 7.84, 95% CI 5.42 to 11.36). In addition, higher rates of psychotropic prescribing were observed in prisoners of white ethnicity in prison (PR 2.38, 95% CI 1.98 to 2.87).

The survey revealed significant differences in drug choice between prison and the community. Among patients prescribed antidepressants, prisoners were four times more likely to receive mirtazapine (PR 4.26, 95% CI 3.87 to 4.69), but less likely to receive a tricyclic antidepressant (PR 0.56, 95% CI 0.49 to 0.65). Among patients prescribed antipsychotics, olanzapine and quetiapine (second-generation antipsychotic drugs) were prescribed twice as often in prison (PR 2.12, 95% CI 1.80 to 2.49; PR 2.25, 95% CI 1.90 to 2.67).

In 65.3% of cases, the indication for the drug was recorded and upheld in the BNF. Antipsychotic prescriptions were more likely than other psychotropic medications to be accompanied by an invalid (not indicated) diagnosis in the patient notes (PR 2.03, 95% CI 1.70 to 2.44). The most common invalid indications recorded for antipsychotic prescriptions were personality disorder, aggression and anxiety.

Almost one in five (19.4%) antipsychotics were prescribed at subtherapeutic doses, below the level required to treat psychoses. A serious (BNF 'black dot') drug–drug interaction involving a psychotropic medication was noted in 15.7% of prescriptions. The mean monthly cost per patient for psychotropic prescriptions was £1.47 for men and £12.98 for women. Generic (non-branded) drugs were prescribed in 99.5% of cases. Psychotropic prescriptions issued to women were almost 10 times more likely than those issued to men to be for non-standard (and, often, more costly) preparations, for example liquid, depot and/or orodispersible tablets (PR 9.8, 95% CI 6.38 to 15.19).

Acceptability study

Almost one-quarter (23.8%) of patients identified a mental health problem as their main reason for seeing the doctor. Before their appointment, two-thirds (69.7%) of all patients wished to start, stop and/or change their medication. Patients who identified mental health as their primary problem were more likely than patients who identified other types of health problems to want to start, stop and/or change their medication (PR 1.46, 95% CI 1.23 to 1.74). Following the consultation, a greater proportion of individuals who identified mental health as their primary problem reported dissatisfaction with the consultation than other patients (PR 1.76, 95% CI 1.01 to 3.08).

In 62% of cases, doctors thought that patients definitely (41.5%) or probably (20.5%) wanted a prescription. In 26.7% of cases, doctors reported feeling definitely pressured (5.1%) or a little pressured (21.6%) to prescribe. Doctors were more likely to issue a prescription when they thought that the patient wanted a prescription (PR 4.2, 95% CI 2.41 to 7.28), they perceived pressure to prescribe (PR 1.66, 95% CI 1.26 to 2.19), and/or the problem was a mental health problem (PR 1.67, 95% CI 1.27 to 2.20).

Conclusions

This study presents the first comprehensive, national study of psychotropic prescribing in English prisons since 1997. The findings from this study suggest that psychotropic medicines are prescribed frequently in prisons, and for a wider range of indications than those for which they are currently recommended. Without current and robust data on comparative rates of mental illness, it is not possible to fully assess the extent to which psychotropic prescribing was appropriate and proportionate to the level of need. Nonetheless, one-third of all psychotropic medicines and half of antipsychotics prescribed in prison were for unidentified or unlicensed indications not upheld in the BNF. While such practices may not be unique to prison settings, they lack an established evidence base and are against current clinical guidance. Furthermore, prescribing psychotropic medicines off-label may increase the risk of physical health problems, in some cases without clear clinical benefits.

Women in prison were three times more likely than men in prison to be prescribed psychotropic medication. In addition, psychotropic prescription costs for women in prison were nine times higher than they were for men, largely as a result of the increased use of costly oral solutions. This suggests a different response to the treatment of women prisoners, where women are more likely to be medicated and prescribing decisions are more influenced by security, rather than purely clinical, reasons. In addition, higher rates of psychotropic prescribing were observed in white prisoners, raising questions about access to treatment for black and minority ethnic prisoners.

One in four patients attending primary care consultations in prison wanted help for a mental health problem. While overall rates of satisfaction were high, prisoners presenting with mental health problems were more likely to be dissatisfied with consultation outcomes than those with other problems. Following the consultation, less than one-third of patients who wanted help with emotional problems reported having received it.

Implications for practice

In the absence of current and robust data on rates of mental illness in prisons and the wider community, it is difficult to determine the extent to which psychotropic prescribing rates in prison were appropriate and proportionate to the level of need. Nonetheless, the evidence from the current study, set in the context of the wider evidence base in this area, suggests that prisons may benefit from developing a broader range of responses to mental illness and distress than prescribing psychotropic medicines. This research showed that psychotropic medicines were used in prisons to treat a broad range of illnesses and symptoms, not all of which have an established evidence base. For example, it would appear that doctors in prison are continuing to prescribe drugs for personality disorder, against the recommendations of the National Institute for Health and Care Excellence. This phenomenon might not be unique to prisons; however, there is still a need to review the treatment of individuals prescribed these drugs and, where possible, to identify alternative options. Prescribers should also document the reasons for prescribing psychotropic drugs and justify any unlicensed uses of prescribed medicines. Greater access to psychological therapies and support for vulnerable individuals in custody could be one way to reduce reliance on medication.

Furthermore, given the wider concerns surrounding the iatrogenic effects and increased risks in morbidity and mortality associated with psychotropic medicines, there should also be robust systems in place to monitor and manage the physical health of prisoners receiving such treatment. This is especially important among prisoners who, first, are more likely to be prescribed certain psychotropic drugs with a propensity for weight gain and, second, commonly have multiple health problems, adding to the complexity of care. It may, thus, be beneficial for prisons to offer medicines use reviews to provide advice on medicines, optimise medicines use and help to identify drug–drug interactions.

Some prisons were still not using electronic health record systems for issuing prescriptions. This is likely to be an unnecessary hindrance to information sharing between prescribers and other health-care professionals in prison. Using electronic prescribing is available, would improve transparency, safety and shared care.

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This report

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