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Reductions in convictions for violent crime during opioid maintenance treatment: A longitudinal national cohort study

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ABSTRACT

Background: Although opioid maintenance treatment (OMT) has been found to reduce crime, less is known about its associations with violent crime. This study investigates changes in violent crime convictions prior to, during, and after OMT, and examines the relationship between violent crime convictions prior to OMT with the risk of violent and non-violent crime convictions during treatment.
Methods: The cohort comprised all who started OMT ($n = 3221$) in Norway between 1997 and 2003. Treatment data were cross linked with the national Crime Registry. Convictions for violent crime 3 years prior to, during, and after treatment were studied.
Results: Violent crime rates were significantly reduced during OMT compared with before treatment, for both men and women. The rate of convictions for violent crime during OMT was halved amongst those who remained in treatment. The reduction was less pronounced for those who left treatment: for this group, the rate of violent convictions after OMT was higher than before treatment. The risk of convictions for violent and non-violent crime during OMT was highest for those with violent convictions prior to treatment.
Conclusions: Violent crime is reduced during OMT. Screening for violent behaviour and violence risk assessment should be implemented in the treatment system.

1. Introduction

Violence is a major health problem worldwide. Deaths, injuries and other consequences result in huge costs to individuals and to societies (Krug et al., 2002). Associations between substance abuse and crime have been widely reported (Chaiken and Chaiken, 1990; Gossop et al., 2000b; Sinha and Easton, 1999). Studies have reported associations between alcohol use and violent behaviour (Fergusson and Horwood, 2000; Haggård-Grann et al., 2006). Alcohol use is more likely to be related to violent crime than use of other substances (Boles and Miotto, 2003; Goldstein, 1998). Violence has also been linked to use of amphetamines/methamphetamine (Darke et al., 2008) and cocaine/crack cocaine (Kuhns and Clodfelter, 2009). Although criminal behaviour involving acquisitive offences is frequently found amongst dependent opioid users, violent offences appear to be less common (Farabee et al., 2001; Haynes, 1998; Kinner et al., 2009; Stewart et al., 2000; Bukten et al., 2012). However, the relationship between opioid use and violent crime is less well researched, and possible mechanisms linking opioids to violence are not well understood.

The question of how addiction treatment interventions influence criminal behaviour is important for the implementation and evaluation of treatment programmes, and for the development of effective drug policies. Studies have reported reductions in criminal behaviour during OMT (Bukten et al., 2012; Gossop et al., 2003b; Hall, 1996; Marsch, 1998), but these have focused mainly on acquisitive crime and drug selling offences. OMT may also lead to reductions in violent crime. A reduction in arrests for violent crime during OMT was reported by Anglin and Speckart (1988), and lower rates of convictions for violent crime after treatment were reported by Gossop et al. (2005).

The present study examines the relationship between convictions for violent crime and OMT in a complete national OMT population over a 9 year period. The study investigates changes in convictions for violent crime prior to, during and after OMT.

2. Methods

2.1. Setting, study design and sample

The Norwegian opioid maintenance treatment (OMT) programme started in 1997 and was designed for severely addicted heroin users not benefiting from other types of treatment (Waal, 2007). Norwegian crime statistics (1995–2003) provide

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data on date of crime, penal code, and 4 legal decisions: formal charge leading to conviction, formal charge leading to acquittal, fines and other. Centres provided complete lists of all patients with start and end dates for OMT (including several treatment episodes). Data from the national OMT-register and the crime statistics were linked using the unique identification number assigned for all Norwegian citizens.

The study comprised all persons ($n = 3221$) admitted to the national OMT programme between 1997 and 2003. Participants were included in the study at admission to OMT, and crime data for the 3 years prior to admission were included. The study period therefore consisted of individual and varying observation times, from admission to OMT until the last day of observation. The observation period for the study (January 1st 1995 until December 31st 2003) covered a total of 9 years. Criminal convictions were investigated during the 3 years prior to treatment, during treatment, and after treatment. Analyses were also conducted for persons who remained in treatment or who left treatment. The drop-out group included persons with one or several terminated treatment episodes, and time between treatment episodes is included in the period "after treatment".

2.2. Measures

The main study variable was formal conviction for a violent crime. All convictions were confirmed in a court of law. Violence was defined as an intentional attempt, threat, or actual or intended infliction of bodily injury or harm on another person (Monahan, 1981; Webster et al., 1997). Violent offences included threats with weapon, unlawful imprisonment, bodily harm, grievous bodily harm, grievous bodily harm causing death, and murder. Sexually violent crime (Boer et al., 1997), arson and economically motivated violent crime (robbery, aggravated robbery, and extortion) were classified as violent crimes.

Convictions were recorded for all offence types (violent crime, acquisitive crime, sale and distribution of narcotics, road traffic offences, and other offences). OMT-patients were grouped according to convictions during the 3 years prior to OMT (convicted of violent crime, convicted of crimes other than violence, and no convictions).

2.3. Statistical analyses

Violent crime rates were calculated as convictions per 100 person years with 95% confidence intervals. Relative risk with 95%CI was used to measure the differences in risk of being convicted for violent and non-violent crime during OMT for different groups.

2.4. Ethics

The study was approved by the Regional Committees for Medical and Health Research Ethics, the Norwegian Social Science Data Services (NSD), and the Norwegian Directorate of Health.

3. Results

3.1. Sample characteristics

The cohort comprised 3221 persons; 68% ($n = 2176$) were men and 32% ($n = 1045$) were women. Mean age at entry to OMT treatment was 37.7 years (SD 6.6) for men, and 35.5 years (SD 6.6) for women. The total observation time for the cohort was 17,399 person years: this included 9663 person years during the 3 years prior to OMT, 6447 person years during OMT, and 1289 person years after OMT.

3.2. Violent crime prior to OMT

A total of 517 convictions for a violent crime were found during the 3 years prior to OMT. This comprised 2.5% of all convictions. 295 participants had at least one conviction for a violent offence: 258 men (12% of men) had 461 convictions (mean 1.8, range 1–12), and 37 women (3.5% of women) had 56 convictions (mean 1.5, range 1–4).

The two most common offences were threats and assaults: men had 317 cases (69.8%) and women had 31 cases (55.4%). Economically motivated violent crime accounted for 65 cases (14.1%) amongst men and 17 cases (30.4%) amongst women. Men had 2 cases (0.4%) of sexual violence and 13 cases (2.8%) of arson. Offences involving violence against the person were found in 47 cases amongst men: 46 cases were for grievous bodily harm with and without a weapon, and one murder. Women had 5 more serious cases: 3 for grievous bodily harm and 2 murders.

3.3. Rates prior to, during and after OMT

Changes in rates of convictions for violent crime during the pre-, during-, and after-treatment periods are shown in Table 1 for women and men who remained in treatment and for those who left treatment. Both groups of women showed a reduction of violent crime during OMT compared with pre-treatment levels. Pre-treatment violent crime rates were reduced during OMT amongst male patients retained in treatment. A less marked reduction during OMT was found amongst men who left treatment. This group had a higher rate of violent crime after treatment compared with pre-treatment levels.

3.4. Relative risk of convictions for violent and non-violent crime during treatment

Conviction rates for violent crime during treatment are shown in Table 2. Comparing those who had been convicted of violent crime prior to OMT with those convicted of non-violent crime, the relative risk (CI) of being convicted for violent crime during treatment was 6.1 times higher for men (4.5, 8.4), and 2.3 times higher for women (0.5, 10.2). Comparing the violent crime group with the no crime group, the relative risk of being convicted for violent crime during treatment was 33.9 times higher for men (17.0, 67.5) and 10.2 times higher for women (1.7, 60.1). Comparing all with convictions for violent crime prior to OMT with those with non-violent convictions prior to OMT, the relative risk of being convicted for non-violent crime was 1.6 times higher (1.4, 1.7). Comparing the violent crime group with the no crime group was 9.1 times higher (8.0, 10.3).

4. Discussion

Convictions for violent offences were substantially reduced for both men and women during opioid maintenance treatment. Reductions in convictions for violent crime during OMT represent important benefits in terms of reduced economic and psychological costs for society (Goldstein, 1998). During the 3 years prior to treatment, more than 500 violent crimes were recorded for the cohort: conviction rates were higher for men (12%), but 3.5% of the women had also been convicted of a violent crime. Such rates are much higher than for the general population in Norway (rates for adult males are 0.2%/year, and 0.03% for women) (Statistics Norway, 2010).

Retention in treatment is related to superior outcomes for substance use, injection risk behaviours, social functioning, health, mortality (Clausen et al., 2008), and criminal behaviour (Bukten et al., 2012; Gossop et al., 2003a). The effects of drug dependence treatment are optimized when patients remain in continuing care (McLellan et al., 2000), and in the present study, violent crime was substantially reduced whilst patients remained in OMT. Reductions in violent crime during treatment were found amongst those who were retained in OMT and amongst those who subsequently left treatment. Convictions for violence were more than halved amongst those who remained in treatment: for those who dropped out of treatment, the reduction in violent offending during OMT was less pronounced. Opioid users who dropped out of treatment were found to have a particularly elevated level of violent offending after leaving treatment compared not only to their in-treatment level, but also compared to pre-treatment levels.

Differences in pre-treatment criminality were found between those who remained in OMT compared to those who left treatment. The drop-out group was more likely to have violent convictions prior to OMT. Violent offending during treatment was also related