Pergamon

International Journal of Law and Psychiatry, Vol. 21, No. 3, pp. 273–279, 1998

0160-2527/98 $19.00 + .00

PII S0160-2527(98)00005-3

Psychiatric Disorders in the Population and in Prisoners

Roger C. Bland,* Stephen C. Newman,† Angus H. Thompson,‡ and Ronald J. Dyck§

Introduction

Those who commit the most offensive of crimes are regarded by some as inevitably mentally ill, since their actions defy comprehension by the rest of society. On the other hand, some consider that certain people are just very bad and that only truly bad persons would perform such horrendous crimes. Such criminal activity, however, is rare in comparison with the vast body of people (and their acts) who come into conflict with the law.

Of wider interest is the proportion of those in various legal difficulties who have mental disorders. Are those with mental disorders over-represented in this group as compared with the general population? Only in the last 15 to 20 years has it been possible to examine that question in a reasonably scientific manner. The ability to show the proportion of people in the population with a mental disorder depends on agreement on the definitions of disorder (that is, clear diagnostic criteria) and the ability to accurately examine large populations using explicit diagnostic criteria. Thus, the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition* ([DSM-III-R] American Psychiatric Association, 1987), provided detailed operational criteria for diagnosis, and the subsequent development of structured interview questionnaires such as the Diagnostic Interview Schedule (DIS) (Robins, Helzer, Croughan, Williams, & Spitzer, 1981), suitable for use by trained lay interviewers, allowed examination of large populations. These developments were the basis for Epidemiologic Catchment Area (ECA) investigations in the United States (Eaton & Kessler, 1985; Robins & Regier, 1991) and similar investigations in many

*Professor and Chair, Department of Psychiatry, University of Alberta, Edmonton, Alberta, Canada.

†Associate Professor, Department of Psychiatry, University of Alberta, Edmonton, Alberta, Canada.

‡Adjunct Professor, Department of Psychiatry, University of Alberta, Edmonton, Alberta, Canada.

§Associate Clinical Professor, Department of Psychiatry, University of Alberta, Edmonton, Alberta, Canada.

Address correspondence and reprint requests to Prof. Roger C. Bland, University of Alberta, Department of Psychiatry, 1E1.01 Mackenzie Centre, 8440-112 Street, Edmonton, Alberta T6G 2B7, Canada.

other locations including Edmonton (Bland, Newman, & Orn, 1988), and form the basis for this paper.

Offenders give special problems concerning which subpopulation should be the subject for investigation. Possibilities include those charged with an offense; those convicted; those sentenced to prison[1] terms of less than 2 years; those sentenced to prison terms greater than 2 years (in Canada, those sentenced to prison terms of less than 2 years are kept in provincial jails, whereas those receiving longer sentences serve them anywhere in the Federal system); those who receive nonprison sentences (e.g., fines or probation); those for whom an insanity defence is used; those who are remanded for examination; and those found unfit to stand trial.

Obviously, examination of each of these groups for mental disorders is likely to be lead to different findings. In an earlier paper we reviewed some of the studies on psychiatric disorders in prisoners and commented on the methodological problems (Bland, Newman, Dyck, & Orn, 1990). Teplin (1990) summarizes these as problems of sample selection (nonrandom), measurement (diagnostic problems), and sample size (inadequate). She provides an appendix tabulating recent (mostly United States) studies and highlights that none of them provides a comparison of rates with those found in the general population.

In this paper we report the results from examination using standardized diagnostic interviews of a random sample of those who received prison sentences of less than 2 years, and compare those with the results from a community survey using similar methods for diagnosis and case detection. The sentence time of less than 2 years was selected because, in the Canadian system, such persons serve their sentences in the provincial prison system. Those serving longer sentences are in the Federal system and may be incarcerated outside of the province where the offense was committed, thus making them difficult to access for interview.

Methods

The population study used a random sample of 3,258 community residents of Edmonton who were interviewed by trained lay interviewers using the Diagnostic Interview Schedule (DIS), which yields DSM-III diagnoses. Diagnoses were produced hierarchy-free (that is, without exclusion criteria) by a standard computer program. The results originally reported were adjusted to the census population on the basis of age, sex, and household size. Those interviewed are 72% of those with whom an interview was attempted (Bland, Newman, & Orn, 1988).

For the prison sample two waves of interviews were conducted, each being a systematic random sample from the roster of inmates, excluding duplicates and restricting the sample to Edmonton residents. Initially, 295 inmates were selected for the study, but 16 were discharged or transferred before being interviewed, leaving 279. Of these 222 consented to be interviewed (response rate of 79.6%). Of those interviewed, only 28 were women, and only 14 (all

[1]In this paper the terms jail, prison, and correctional center are used synonymously, as are the terms prisoner and inmate.

men) were aged 45 years or older. Since the latter two groups were considered too small for analysis, results are reported only for the 180 male inmates below age 45, and these were compared with those for the males from the community sample in the same age group (n = 924). The major interview instrument used was the DIS, administered and analyzed in the same way as for the community sample (Teplin, 1990). The population prevalence uses the community rates for each specific age and marital-status group of males between 18 and 45 years of age post-stratified to the proportions found in the prison population. Thus the population rates differ from those previously published (Bland, Newman, & Orn, 1988). This method yields an observed number of cases in the prisoners and an expected number derived from the population. The ratio of observed to expected cases is the standardized prevalence ratio (SPR). Statistical tests of the hypothesis that the SPR = 1 were performed using SESUDAAN (Shah, 1981), with its capability for analyzing survey data from complex sampling methods. The inmate sample was treated as a simple random sample for the calculation of prevalence rates.

Results

Inmate Characteristics

Inmates are young: only about 8 to 10% are over age 45 (compared with 32.5% of the population), and of the remainder, 44% are under age 25 (compared with 28% of the population). About 90% of inmates are men. Whereas 11.7% of inmates are aboriginal, aboriginals make up only 1.8% of the comparable male population (that is, aboriginals are represented among inmates at 6.5 times the expected rate). Racial groups other than aboriginal or Caucasian constitute only 4.5% of inmates and 11.2% of the population. Inmates are more likely to be single, in common-law unions, widowed, separated, or divorced. Only 11% of inmates are married, compared with 43% of the comparable population group. The education level of inmates is low compared with the population: 27% versus 9%, respectively, had less than grade 10, and 50% versus 70% had some post-secondary education.

The offenses committed by the interview subjects were impaired driving, 21%; breaking and entering, 14%; theft under 1,000, 7%; possession of stolen property, 6%; trafficking, 4%; other (including fraud, possession of drugs, mischief, assault), 48%.

For Alberta in 1986–87, over 15,000 persons, of whom 91% were male, were sentenced to provincial correctional centers; 57% of those sentenced received terms of less than 31 days, and only 10% terms longer than 1 year.

For those who were interviewed the median sentence was 5 to 6 months; 57% had been previously convicted in juvenile court, and for only 14% was this the first adult offence.

Psychiatric Disorders

We examined the lifetime prevalence (the proportion who had ever had the disorder) and the 6-month prevalence (the proportion who had had the disor-

der during the preceding 6 months) (Table 1). A very high rate of disorder was found among inmates. As Table 1 shows, over 90% had had a disorder at some time in their life, and 87% had had a substance-use disorder, involving either alcohol or drugs. The proportion showing symptoms in the preceding 6 months was also high (76.7%). Table 1 also shows the rates in the general population of men in the same age and marital-state groups as the inmates. Lifetime rates are all significantly higher among inmates (for any disorder, 2.1 times the population rate), but an even higher ratio is found with the more recent disorders (3.3 times the population rate for the 6-month prevalence), a period that is likely to include the time of the offence. The higher prevalence rates among prisoners were found for most disorders, but particularly high rates were evident for substance use and antisocial personality disorders. High rates were also found for affective and anxiety disorders. For each disorder, the rate among prisoners, both lifetime and 6-month, significantly exceeds that found in the matched population.

Suicide Attempts

Of the male inmates interviewed, 22.8% had at some time made a suicide attempt, which is 7.1 times the expected rate in the general population (men, aged 18–44 years).

Of the suicide attempters, 95% had a history of substance use, 76% an antisocial personality disorder, 42% an affective disorder, and 39% an anxiety dis-

TABLE 1
Prevalence of Psychiatric Disorders in Inmates and the Population (Males Aged 18–44)

	Lifetime prevalence		Six months prevalence	
	% Inmates	% Population[a]	% Inmates	% Population[a]
Any disorder	91.7**	43.7	76.7**	23.2
Substance use disorders	87.2**	39.6	62.2**	15.2
Alcohol abuse/dependence	78.9**	35.9	50.6**	13.3
Drug abuse/dependence	50.6**	14.5	24.4**	4.4
Antisocial personality	56.7**	8.6	47.8**	5.0
Affective disorders	22.8**	12.0	21.1**	6.6
Manic episode	4.4*	0.8	3.3*	0.6
Major depression	16.7**	9.3	13.9**	3.4
Dysthymia	10.6**	3.8		
Anxiety/somatoform disorders	15.6**	5.6	11.7*	3.3
Panic	7.2**	1.1	6.7**	0.5
Phobia	7.8*	3.1	3.9**	1.7
Obsessive compulsive disorder	9.4**	2.1	8.3**	1.5
Schizophrenia	2.2**	0.5	2.2**	0.4
Cognitive impairment	1.1**	0.4		

[a]This is the population rate for males, post-stratified to the age and marital status distribution of the inmates.

*$p < .05$.

**$p < .005$ (significance tested using SESUDAAN methods for analyzing complex survey data and comparing ratios of rates based on the null hypothesis).

order. All of these rates were significantly higher ($p < .05$) than those found among inmates who had not made suicide attempts.

Discussion

Provincial correctional facilities accommodate inmates serving sentences of under 2 years who are drawn from the same population as our population sample. The inmates of the provincial correctional facilities are poorly educated single young men, serving short sentences for repeat offences. They are far more likely to have both social and psychiatric problems than comparable members of the general population. They show the same social and psychiatric problems that are frequently associated with violent behaviors. For many, the problems started in early life and were often associated with alcohol and drugs. They have seven times the expected rate of suicide attempts. Aboriginals are over-represented, but other non-Caucasian racial groups are under-represented.

These findings raise a number of questions. The scarcity of inmates over age 45 suggests either that there has been an increase in criminal behavior in the younger age groups or that these behaviors remit with increasing age. Alternatively, offenders may have an excess mortality, thus removing themselves from the population. It is possible that they commit more serious offenses as they age and then become incarcerated in the Federal system, which accommodates those receiving longer sentences. We know that alcohol use and drug use have a lower lifetime prevalence in the older population, and that these disorders are highly associated with the offenses committed by those who receive short sentences. The present generation of young adult men has high rates of alcohol and drug use, and they may carry the association forward into an extended criminal career as they age, as a cohort effect. The most likely explanation, however, is that these behaviors remit with increasing age.

Where are all the women? The inmate population matches rather well the patterns of alcohol and drug use found in the population; that is, users are predominantly young and male. But increasing rates of substance use have been noted among young women. Perhaps young women who have behaviors similar to those of the young male inmates are less likely to get arrested, or maybe such behaviors are less likely among young women than among young men, because of different social roles and expectations.

The part played by the decreasing number of institutional places for the mentally ill may be significant. The number of hospital days for psychiatric disorders per 1,000 population over the age of 16 was 2,269 in 1955; by 1988/89 it was 667, only 29% of the 1955 number. This has happened despite clear indications that the prevalence of psychiatric disorders is increasing. There are increased resources in the community, and there has been an enormous increase in outpatient care, but the very disadvantaged population that enters the correctional system may comprise those who have been displaced from the mental health system.

Teplin's study (1990) of prevalence among male urban jail detainees from Cook County as compared with the ECA study community prevalence findings is of particular interest in relation to our study. Teplin's jail detainees

were pre-trial subjects, of whom presumably a proportion would subsequently be acquitted. They were detained after pre-trial arraignment, and thus those who were not detained but were released on bail or on their own recognizance would not be included. Our subjects had been tried and sentenced to jail terms not exceeding 2 years. Teplin's community comparison is based on results from the ECA—a five-center study, in which the area served by Cook County Jail was not included. Thus the ECA centers together may reasonably represent the U.S. population, but the prisoners studied were from one location only. Teplin used the ECA data for males in the same age groups as the prisoner population, but it is not clear that she post-stratified to standardize the population rates to the prisoners (or vice versa). In our study we used only prisoners drawn from the same population studied for the population sample, and by post-stratification by age and marital status we standardized the population data to the prisoner population. Thus our prisoner-standardized population prevalence rates are considerably higher than the population rates adjusted to the population census, and are much higher than the ECA population rates derived by Teplin. Nevertheless, the direction of the findings—that, using standard methods, the prevalence of psychiatric disorder in a male prisoner population is much higher than in the comparable general population—is the same in both Teplin's study and ours, in each of which the same interview diagnostic instrument was used (DIS), and was analyzed in a nonhierarchical diagnostic program. It should be noted that Teplin found the highest prevalences among the white prisoners, although the majority of prisoners were black. The predominant prisoner group in our study was white, with the next most frequent group being aboriginals, a group not identified in either Teplin's study or the ECA.

The present system of numerous brief sentences, for often minor offenses by a population that is socially and psychiatrically disadvantaged, in which there is a high rate of repeat offenses, and to which little or no treatment or rehabilitation is given, appears to serve no one very well. Society bears the cost but derives little benefit; the individuals fail to benefit from the experience, and there is little evidence that the experience serves to modify subsequent behavior.

It may be time to revise social policy. The reforms introduced by Churchill when he was Home Secretary in Britain illustrate how radical, rapid, and effective reform can be. When Churchill became Home Secretary in 1910 there were 184,000 prisoners; a third had been committed for drunkenness, and more than half for failure to pay fines. Within a year he had reduced the number of debtors and drunks in prison from 158,508 to only 6,934 (Manchester, 1983).

References

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders*. (3rd ed., revised). Washington, DC: Author

Bland, R. C., Newman, S. C., Dyck, R. J., & Orn, H. (1990). Prevalence of psychiatric disorders and suicide attempts in a prison population. *Canadian Journal of Psychiatry*, *35*, 407–413.

Bland, R. C., Newman, S. C., & Orn, H. (1988). Epidemiology of psychiatric disorders in Edmonton. *Acta Psychiatrica Scandinavica*, (Suppl 338), *77*, 7–80.

Eaton, W. W., Kessler, L. G. (Eds.) (1985). *Epidemiologic field methods in psychiatry: The NIMH Epidemiologic Catchment Area Program*. New York: Academic Press.

Manchester, W. R. (1983). *The last lion: Winston Spencer Churchill: Visions of glory 1874–1932*. Boston: Little, Brown and Co. pp. 414–416.

Robins, L. N., Helzer, J. E., Croughan, J., Williams, J. B. W., & Spitzer, R. L. (1981). *The NIMH diagnostic interview schedule, version III*. Washington, DC: U.S. Public Health Service.

Robins, L. N., Regier, D. G. (Eds.) (1991). *Psychiatric disorders in American: The Epidemiological Catchment Area Study*. New York: Free Press.

Shah, B. V. (1981). *SESUDAAN: Standard errors program for computing standardized rates from sample survey data*. Research Triangle Park, NC: Research Triangle Institute.

Teplin, L. (1990). The prevalence of severe mental disorder among male urban jail detainees: Comparison with the Epidemiologic Catchment Area Program. *American Journal of Public Health, 80*, 663–669.