

# Characteristic illness behaviour in assault patients: DATES syndrome

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*J R Soc Med* 1995;88:85-87

**Keywords:** *drug abuse; assault; trauma; elective surgery*

## SUMMARY

Violent crime has become a public health issue, not least because the needs of victims have been neglected in the criminal justice system. Since this group suffer more psychological distress than victims of accidents, we compared illness experience in 433 adult assault victims with paired victims of accidents in a case control study. In the 10 year period prior to injury, there was a significant excess of hospital contacts in the assault group in relation to trauma, elective surgery and drug abuse but not to other psychiatric or medical conditions. This spectrum of disorders constitutes a previously unrecognized syndrome in young adults, probably representing the manifestations of antisocial personality.

## INTRODUCTION

Rising crime rates in many western countries have focused attention on violence and delinquency as public health issues and on victims of crime in particular<sup>1</sup>. This is a step forward because the needs of victims and prevention of injury have often been disregarded in the criminal justice system<sup>2</sup>. Furthermore, a substantial 'dark figure' of violent crime is not reported or recorded by the police in many countries and investigations are necessary to establish risk factors and the true levels of morbidity which result from violence. Violent crime results in physical and psychological injury and can result in post-traumatic stress disorder. Victims of assault treated in accident and emergency (A & E) departments have been shown to have higher levels of anxiety, depression and psychiatric symptoms 12 weeks after injury than victims of accidents controlled for age, sex and severity and site of injury<sup>3</sup>. It is not clear, however, whether this difference is limited to psychological problems, or whether people who are injured in assaults also have higher rates of illness in general, and are a group on whom health services and prevention programmes should be focused more sharply. This paper describes an investigation designed to test the hypothesis that illness experience is higher in this group, using contact with hospital services as a marker.

## PATIENTS AND METHODS

Contact rates with hospital services are one way of assessing demand for, and uptake of, health-care by populations, particularly using computerized patient administration systems. The study patients comprised all 433 adults (over 15 years; 67 women) who were resident within the boundaries of the Bristol and Weston District Health Authority (population 1991: 297 714 adults) and who attended the only A & E department (new patient attendances 1990: 54 015) in that district after an assault in 1986. Mean age was 20 years for men (range 16-74) and 23 years for women (16-81 years). Control patients were other A & E attenders, all injured in accidents, individually matched for age ( $\pm 2$  years), sex, day and time of attendance ( $\pm 3$  h), and electoral ward of residence to control both for socio-economic background and distance from the hospitals. Indices for deprivation and victimization in the electoral wards containing the hospital catchment population had previously been established<sup>4,5</sup>. Although it was not possible to control for socio-economic class on an individual basis, given other constraints in terms of numbers and geographical location in relation to the A & E department, individuals were selected from wards with homogenous populations to minimize the risk of ecological fallacy. All contacts with the 10 health authority hospitals in the 10 years 1 January 1976-31 December 1985 (the 10 years before the index assault) were identified through the health authority (HA) patient administration computer.

Hospital contacts were then categorized from individual case records as medical (excluding dermatology); surgical (only including those unrelated to trauma which led to an elective surgical operation under general anaesthesia); psychiatric (substance abuse); psychiatric (other psychiatric

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**Table 1** Hospital contacts in cases and controls with estimates and 95% confidence intervals for the odds ratio

Type of contact	Case+		Case-		Total	Percentage+ve		Odds ratio (B/C)		McNemar p-value
	Control+(A)	Control-(B)	Control+(C)	Control-(D)		Cases	Controls	Estimate	95% CI	
Any hospital contact (excluding childbirth and dentistry)	23	116	43	251	433	32.1	15.2	2.70	1.95 to 3.97	<0.001
Any hospital contact (excluding child-birth and dentistry)										
Females	2	23	5	37	67	37.3	10.4	4.60	1.71 to 15.5	<0.001
Males	21	93	38	214	366	31.1	16.1	2.45	1.71 to 3.71	<0.001

**Table 2** Hospital specialty contacts in cases and controls with estimates and 95% confidence intervals (CI) for the odds ratio

Type of contact	Case+		Case-		Total	Percentage+ve		Odds ratio (B/C)		McNemar p-value
	Control+(A)	Control-(B)	Control+(C)	Control-(D)		Cases	Controls	Estimate	95% CI	
Otorhinolaryngology	2	21	14	396	433	5.3	3.7	1.50	0.73 to 3.19	0.24
Dermatology	0	16	7	410	433	3.7	1.6	2.29	0.89 to 6.57	0.061
Surgery (excluding for trauma)	2	49	12	380	433	10.4	2.3	5.37	2.50 to 13.2	<0.001
Medical (excluding dermatology)	2	24	17	390	433	6.0	4.4	1.41	0.73 to 2.80	0.27
Trauma	9	60	25	339	433	15.9	7.9	2.40	1.48 to 4.00	<0.001

disorders); trauma (excluding all contacts related to the assault/accident in 1986); dermatological and otorhinolaryngological. Contacts relating to congenital malformations (such as cleft lip), child-birth and dentistry were excluded.

Although all the study and control patients lived within the health district boundaries, some may have moved out temporarily and had contact with hospitals in other districts. A small minority of women, on marriage in the 10 year period, changed surnames and medical histories prior to this change were not always traceable. A few hospital contacts may have been missed because plastic and neurosurgery in-patient (but not out-patient) services were located in another adjacent district.

Statistical analysis was carried out using McNemar's test and calculation of the odds ratio (OR) appropriate for individually matched data.

**RESULTS**

The number of assault patients who attended hospital on one or more occasions in the 10 year period was 139 (32%) compared with 66 (15%) of controls. In 251 pairs (58%),

neither the assault nor the control patient had attended hospital in the 10 year period. In 23 pairs (5%), both patient and control had attended, in 116 cases (27%), the assault patient had attended while the control had not, and in 43 cases (10%), only the control patient had a history of hospital attendance (Table 1). Overall, there was a substantially increased prevalence of a positive history of hospital contact in cases, compared to controls (95% confidence interval, CI, 1.95-3.97). This applied to both men and women. Cases had a significant excess of contacts for elective surgical operations unrelated to trauma or its aftermath (CI: 2.50-13.2), treatment after trauma (CI: 1.48-4.0) and substance abuse (CI 1.07-8.78). There were no significant differences in relation to other categories of contact (Tables 2 and 3). Fifty-one assault patients had a history of elective surgery (19 ear, nose and throat procedures: controls three, 12 abdominal procedures: controls: three, 14 excisions of skin or oral naevi and cysts: controls: two, and five urological procedures: controls, two, other procedures one, controls: two) compared with 12 in the accident group. 69 cases had a history of contact after trauma (34 controls), and 17 cases had a history of psychiatry clinic attendance for substance

Table 3 Hospital psychiatry service contacts in cases and controls with estimates and 95% confidence intervals (CI) for the odds ratio

Type of contact	Case+		Case-		Total	Percentage+ve		Odds ratio (B/C)		McNemar p-value
	Control+(A)	Control-(B)	Control+(C)	Control-(D)		Cases	Controls	Estimate	95% CI	
Psychiatry (substance abuse)	0	17	6	410	433	3.9	1.4	2.83	1.07 to 8.78	0.022
Other psychiatry	0	9	6	418	433	2.1	1.4	1.50	0.48 to 5.12	0.44

abuse (six controls). If these attributes are considered as part of a syndrome (see below), 10 assault patients had all four manifestations, 48 had three manifestations and 59 had two.

**DISCUSSION**

The results of this study suggest that people who are injured in assaults have suffered more illness than those injured accidentally or seek treatment or are referred to hospital more often. This association between assault and particular physical and psychiatric conditions is surprising and may reflect family background<sup>6</sup>: that assaults affect young delinquent people in families characterized by erratic parenting, harsh discipline, inadequate supervision (hence less appreciation of the results of high-risk behaviour and more trauma) and drug abuse (hence more contact with hospital psychiatric services in relation to substance abuse). In contrast to the group of relatively frequent hospital attenders, identified in this study, frequent attenders in primary care services are more often female, children and the elderly<sup>7</sup>. Assault victims share some of the characteristics of frequent primary care attenders however, who have both been shown to have higher neuroticism scores, suffered recent stress, more feelings of vulnerability, social problems and weak social networks<sup>4,8</sup>.

This substantial excess of elective surgical operations in assault patients, may reflect background culture and need for immediate solutions to problems, excitement and status in families and individuals in whom antisocial personality (AP) develops. Interestingly, in longitudinal quantitative studies of the development of AP, one of the independently important (but unexplained) predictors of AP at age 32, has been shown to be a history by age 18 of hospital treatment<sup>8</sup>. A history of hospital treatment by 18 of predicted drug use, poor marital relationships and self-reported delinquency (such as violence) by age 32. As Farrington has stated 'impulsive people give relatively more weight to immediate rather than long-term outcomes'<sup>8</sup>. A surgical solution to minor illness/symptoms may therefore be more attractive to these individuals (whether parents or young adults) than longer term solutions just as violence seems the solution to other of life's problems. Alternatively, the social milieu of people dependent on, or abusing drugs and alcohol may lead

them to get into more fights than others of similar age and sex while the substances themselves produce physical symptoms resulting in surgical referral. In the study reported here, however, this seems a less likely explanation given the limited number of patients with identified substance-abuse problems.

The results of this study suggest that, independent of socio-economic variables a spectrum of illness including injury in assault has the same underlying cause. The most likely is AP. This group of patients made disproportionate demands on health services and, constitutes a group which should be a particular target for prevention programmes. Measures which successfully prevent delinquency and assault might also prevent a spectrum of illness, or at least, reduce demands on hospital services. People who are unable to avoid injury in assaults may also be unable to avoid harming themselves with alcohol or other drugs or from seeking and obtaining surgical treatment. With the assault which they predicted, these disorders represent a previously unrecognized association of disorders of young adults, conveniently termed 'DATES syndrome' comprising drug abuse, assault, trauma and elective surgery. This illness behaviour can be explained in terms of antisocial personality.

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(Accepted 5 April 1994)