Assault patients attending a Scottish accident and emergency department

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SUMMARY

Over 2 months in 1995, 235 assault patients attended the accident and emergency department of the Royal Alexandra Hospital, Paisley (2.4% of total new attendances). 80% were male and their mean age was 28 years (range 6–64); men were the assailants in over 90% of attacks. Alcohol had been consumed by 69% of the victims and 9% admitted to taking illicit drugs. The commonest place of assault was the street (44%) but women were more likely to be assaulted in their homes. Penetrating weapons were used in 23% of assaults. 60% of all injuries were to the head and neck. 27% of the victims were admitted to hospital. Paisley has an assault rate similar to that of other UK centres but the use of penetrating weapons is much higher than elsewhere.

INTRODUCTION

Crimes of violence are becoming more prevalent in the UK[1] and Scotland has jumped to fourth amongst comparable countries in an international league table of homicide rates[2]. One of the main reasons for the rise in the homicide rate in Scotland is the increased use of knives in the region of Strathclyde, which has Glasgow as its capital[3]. An audit of assault victims attending the accident and emergency (A&E) department of the Royal Alexandra Hospital in Paisley (a town in Strathclyde) was conducted to assess the prevalence and nature of assault in this region.

METHODS

We included in the survey every assault patient attending the A&E department of the Royal Alexandra Hospital in June and July 1995. This major casualty unit serves the town of Paisley and the surrounding district of Renfrew. No other casualty unit serves this area (population 201 000) and both adults and children use the department. The casualty unit in 1995 recorded a total of 60 000 new attendances.

Ten casualty doctors were involved in interviewing and examining the assault victims. Each doctor incorporated the interview into the routine of taking a history, examination and treatment. The doctor then recorded the findings on a proforma. Every patient was informed about the study: none refused to answer questions, although some were unable to answer some or all questions because of memory loss or diminished consciousness. In these circumstances, details were obtained from people accompanying the victim.

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The amount of alcohol consumed was converted into units of alcohol if it had not already been recorded by the doctor in that way (1 unit=half pint of beer/lager, 1 glass of wine or 1 measure of spirits); blood alcohol concentrations correlate with patients' reported alcohol intake[4,5]. The patient's postcode was also used to locate the postal district in which he/she lived.

The total number of new patients attending the A&E department in June and July was also obtained from the hospital computer, as was the total number of A&E ward inpatient admissions.

RESULTS

Of a total of 9815 new patients attending the A&E department, 235 had been assaulted (2.4%). One assault patient died. Males made up the majority of the assault group—189 (80%). The mean age was 28 years (range 8 to 64). When the assailant's sex was known by the victim, men were involved in 92% of attacks (Table 1). On 43% of occasions, the victim was assaulted by a single male and on 35% of occasions by 2 or more men. Women were the assailants in 10% of assaults, usually on other women (65% of attacks by women were on other women), but women were still more likely to be assaulted by a man.

The largest number of assault victims were in their late teens (22%) with a further 61% between 20 and 45. 20 of the victims were schoolchildren (mean age 14). Even at this age male victims outnumbered female victims by 5 to 1. 15 of the victims were aged 50 years or over and only 2 of this group were women.

Only 35% of those assaulted were in employment; 50% were unemployed (Table 2). All but 12 of the victims lived within the catchment area of the hospital. Those from

Table 1 **Characteristics of attackers**

Attackers	*No. of victims*
Single male	101 (43)
>One male	83 (35)
Mixed	8 (3)
Single female	10 (4)
>One female	5 (2)
Unknown	28 (12)
Total	235 (100)

Table 2 **Employment status of victims**

Employment status	*No. (%)*
Unemployed	118 (50)
Employed	83 (35)
Schoolchild	20 (9)
Student	4 (2)
Retired	3 (1)
Unknown	7 (3)
Total	235 (100)

outside the catchment area came from local towns or Glasgow.

Alcohol and drugs

Alcohol had been taken by 69% of the victims in the six hours before the assault (Table 3). 78% of those admitted to a hospital bed had been drinking. The average consumption of those who had taken alcohol was 10 units. Unemployed victims were more likely to have been drinking (81% *vs* 55%, $P<0.001$) (Table 4).

Table 3 **History of alcohol consumption in the 6 hours before assault**

	Alcohol				
Sex	*Yes*	*No*	*Unknown*	*Total*	*Mean consumption (units)*
Male	137 (72%)	49 (26%)	3 (2%)	189 (80%)	10.3
Female	24 (52%)	22 (48%)	0	46 (20%)	6.8
Total	161 (69%)	71 (30%)	3 (1%)	235 (100%)	

Table 4 **Comparison of unemployed victims of assault and 'others'***

	Unemployed (N=118)	*Others‡ (N=110)*
Alcohol		
Yes	96 (81%)	60 (55%)
No	22 (19%)	50 (45%)
P†	<0.001	
Previous assault		
Yes	75 (64%)	28 (26%)
No	41 (35%)	76 (69%)
Unknown	2 (2%)	6 (6%)
P	<0.001	

*Others=employed, retired, school, student
†Chi-square test
‡Employment status unknown in 7

9% of those assaulted admitted to taking illegal drugs; on over half the occasions the doctor did not record the name of the drug. When the drug name was recorded it was temazepam, diazepam, cannabis, ecstasy, cocaine or heroin. All but one of the victims who had taken drugs also admitted to taking alcohol. Of the 20 schoolchildren assaulted, 2 had taken alcohol and none had taken drugs. 60% of those victims aged over 50 had taken alcohol, but again none had taken drugs. 14 of the 22 (64%) who had taken drugs were unemployed, but 88% of those victims who were unemployed had not taken drugs.

Location and time of assault

A victim was most likely to have been assaulted at the weekend (Figure 1) and between 2000 h and 0400 h (63%). 41% of assaults occurred on the street, 17% in the home, 14% on licensed premises and 6% at work (Table 5). One A&E member of staff was assaulted during the period of the study. Men were more likely than women to be attacked on the street (44% *vs* 26%) and women were more likely to be attacked in their homes (48% *vs* 10%, $P<0.001$). Most of the schoolchildren in the study were attacked out of doors (14 out of 20); one was the victim of a domestic assault in the home and 5 were attacked in school. A higher proportion of those aged over 50 were attacked in their home—6 of 15 (40%).

Previous assault

Less than half of the victims had been assaulted within the past 5 years (44%) but 64% of those who were unemployed admitted to having been assaulted previously. Only 2 of the 20 schoolchildren (10%) admitted previous assault while 8 of the 15 over 50 years (53%) had been assaulted in the past 5 years.

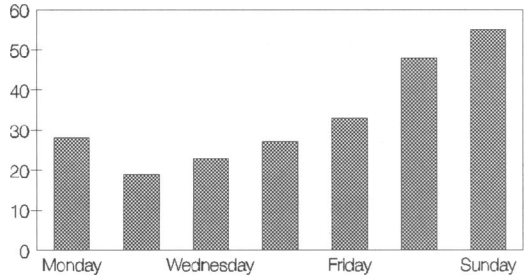

Figure 1 **Number of assault victims attending accident and emergency departments by day of the week**

Table 5 **Location of assault**

Where assaulted	Male	Female	No.
Street	84 (44%)	12 (26%)	96 (41%)
Home	19 (10%)	22 (48%)	41 (17%)
Pub/club	31 (16%)	3 (7%)	34 (14%)
Work	8 (4%)	5 (11%)	13 (6%)
Park	6 (3%)	1 (2%)	7 (3%)
School	5 (3%)	0	5 (2%)
Close	4 (2%)	1 (2%)	5 (2%)
Other*	19 (10%)	2 (4%)	21 (9%)
Unknown	13 (7%)	0	13 (6%)
Total	189 (100%)	46 (100%)	235 (100%)

Someone else's house 4, bus stop/train station 4, petrol garage 2, A&E dept 2, car 2, woods 2, college 1, car park 1, shop 1, car boot sale 1, party 1

Weapon

Fists and feet were used in 43% of attacks, but knives and other sharp blades were used in 23% of attacks; broken bottle or glass was used on 15% of occasions and miscellaneous weapons other than penetrating sharps or glass were used 18% of the time (Table 6). The weapons included baseball bats (10 occasions), hammers (5 occasions), metal bars (5 occasions) and sticks (7 occasions). A shotgun was used twice. A frightening array of penetrating sharps was used. As well as a knife, assailants used machetes, meat cleavers, a scythe, a sword and a sharpened metal bar. Of those patients stabbed, 52% were admitted to hospital. The one death occurred in the resuscitation room as a result of a stab wound to the chest. The two men who were wounded by a shotgun were hit from a distance and their injuries were not life-threatening.

Injuries

Most victims sustained a single injury: 57% of those in whom the nature of the injuries was accurately recorded had only a single injury, 31% a double injury. Bruise/haematoma/abrasion/soft tissue injury was the most frequently recorded injury, accounting for 28% of recorded single injuries and 32% of recorded multiple injuries. Laceration accounted for 28% of single injuries and 23% of multiple injuries. Incised or stab wound accounted for 15% of single attacks and 20% of multiple attacks.

Penetrating sharps were used in 23% of attacks and a broken bottle or glass was used on 15% of occasions. The disparity between the number of attacks involving a penetrating sharp or broken glass (38% of the total) and the lower frequency of injuries recorded as stab or incised wound may be partly due to recording of some such injuries as 'lacerations'. In fact in the episodes where a penetrating sharp (excluding glass) was used, the doctors recorded 'stab' on 20 occasions, 'laceration' on 20 occasions and 'incision' on 18 occasions, which means 34% of the total recorded wounds were caused by penetrating sharps (on 6 occasions an attack with a penetrating sharp resulted in a bruise/haematoma only).

6% of injuries were to the head, face and neck (equal frequency for males and females), 12% to the upper limb. The group as a whole sustained 30 fractures, with equal frequency in males and females—approximately 10%. The high frequency of head attacks was also revealed in the fracture statistics—63% involved the face or skull.

Table 6 **Weapons used in assault**

Weapon	No. of times used
Fist/feet	101
Knife	48
Bottle/glass	36
Baseball bat	10
Headbutt	8
Bite	3
Miscellaneous	40*
Unknown	12
Total	258

*Machetes 3, meat cleaver 2, scythe 1, sharpened metal bar 1, sword 1, hammer 5, metal bar 5, stick 7, brick 6, shotgun 2, golf club 4, airgun 1, clock 1, snooker triangle 1, tin plate 1, beer can 1

Disposal

64 (27%) of the assault patients were admitted to a hospital bed—42 in the A&E ward, 15 to a bed in another specialty in the hospital (usually general surgery) and 7 were transferred to another hospital in Glasgow (3 neurosurgical, 3 plastic surgery, 1 vascular). Assaulted patients made up 11% of the total number of patients admitted to the A&E ward. Of the patients not admitted to hospital, most went

home but 5 went into police custody and 1 was assessed at the local psychiatric hospital. 5 patients went home against medical advice.

DISCUSSION

This study was intended to obtain an impression of the circumstances surrounding assault in a Scottish town—a town which, along with the rest of Strathclyde, has seen recent increases in violent crime.

2.4% of the 9815 patients attending the A&E department had been assaulted (assault rate 705 per 100 000 catchment population per year). Shepherd reported that 2.9% of the total A&E attendances at the Bristol Royal Infirmary were assaults[6] and the equivalent figure in Lewisham in 1986/1987 was 4.4%[7]; Yates *et al.* in Salford, identified 4.4% of the total number of attendances over two weeks as victims of assault (assault rate not known)[8]. Over the three years 1979, 1982 and 1985 the Swedish county of Kopparberg averaged 219 assaults per 100 000 catchment population per year[9]. Hedeboe *et al.* in Denmark reported a rate of 596 per 100 000 catchment population per year in the town of Aarhus in 1982[10]. By contrast, for part of inner city Philadelphia in 1987, Wishner reported an assault rate of 2871 per 100 000 catchment population[11].

From the data reported here, Paisley does not seem to have a higher assault rate than other places studied in Britain. However, the frequency with which weapons were used is worrying—23% involving a penetrating sharp. In Glasgow Royal Infirmary in 1978 and 1983, only 3% of assaults were stabbings[12]. In Lewisham, 15% of the assaults were stabbings or slashings and in Bristol 6% of assaults involved knives. Fligelstone *et al.* in Cardiff conducted an audit of stab wounds and analysed the results slightly differently: there the proportion of stab wounds as a percentage of new cases was estimated at 0.075%[13]. The equivalent figure in Paisley was 0.55%, seven times greater. Strom in Sweden reported the use of a weapon (of any description) in only 15% of assaults, while in Paisley weapons were used in 57% of assaults. Even in the violent black area of Philadelphia stabbings accounted for only 15% of assaults. The fact that in Paisley many of the assaults took place out of doors suggests that the assailant carried the weapon in anticipation of using it, even if he claimed it was for self defence. In other words, while there are not more people willing to assault in Paisley, those who *do* assault are more likely to use a weapon.

As in this study, Shepherd in Bristol found that facial injury was extremely common. However, in the Bristol study, 26% of victims sustained a fracture—a much higher rate than in Paisley (12%). Shepherd noted that fists and feet caused more fractures than any other weapon, and in the Bristol survey, 72% of victims reported the use of fists or feet (compared with Paisley's 43%). The high proportion of attacks with lethal weapons is also reflected in the number of patients admitted to a hospital bed. In Paisley, 27% of those assaulted were admitted to hospital compared with 16% in Bristol and 12% in Lewisham.

Alcohol is a major contributor to assault. The results in this study confirmed the link between assault and recent alcohol intake (the number of men and women who had consumed alcohol were similar to other surveys of assault patients[6,7,14]). One measure that seems to decrease the amount of alcohol consumed by a population is to increase the price[15]. Fiscal measures apart, there needs to be experimentation with the permitted drinking hours to see if more relaxed (or restrictive) drinking times affect the assault rates. Shepherd *et al.* have suggested that changing to plastic drinking glasses will decrease the number of victims who are 'glassed'[16]. Other assault-prevention measures include raising the minimum legal drinking age to 21, formal training of bar staff to avoid serving intoxicated customers and promotion of low-alcohol drinks.

In the USA, homicide has one of the strongest correlations of all types of mortality with low income[17,18]. Over the past 15 years income distribution widened substantially in the UK and a growing number from deprived backgrounds have little chance of legal employment. Half the assault victims in this study were unemployed compared with 10% of the local population. The unemployed victims were also more likely to report previous assault and to have been drinking alcohol before the assault.

In 1989 Norton and Morgan analysed homicide rates in Britain[19] and concluded that 'Homicide may . . . be considered only a minor public health issue in Great Britain'. This is certainly not true of the West of Scotland in 1996. Even though the annual homicide rate is less than 0.2% of the total number of deaths in Scotland, the rate is approaching 2% for men in Strathclyde and in Paisley.

The public are well aware of the rise in violence within our society, although they often have incorrect perceptions regarding the aetiology of violence. The press concentrates on victims who are very young or very old. The statistics paint a different picture—one of drunken young men, often already weaponed, carrying out vicious attacks on each other.

Unlike the criminal justice approach to assault, which targets offenders and emphasizes retribution, deference and incapacitation, public health targets victims and emphasizes prevention and education[20]. At-risk groups need to be targeted for education; most of the victims of assault are young people in their teens and early 20s. If a programme of education was established in secondary schools this would give health professionals the opportunity to get some very important messages across to young people regarding

alcohol, drugs and violence. Some young Scottish males think that carrying a knife increases their status as a man. The risks of permanent disfiguring injury should be emphasized. If they were to be shown some of the evidence of what using a knife actually means, they might become less eager to carry such a weapon.

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