

Association between illegal drugs and weapon carrying in young people in Scotland: schools' survey

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Abstract

Objectives To identify the type and extent of weapons being carried among young people in Scotland, and to determine the relation between use of illegal drugs and weapon carrying.

Design Questionnaire school survey.

Setting Independent schools in central Scotland and schools in Lanarkshire and Perth and Kinross.

Participants 3121 students aged 11 to 16 in 20 schools.

Main outcome measures Self completion questionnaire reporting history of drug use and weapon carrying.

Results Overall, 34.1% of males and 8.6% of females reported having carried a weapon ($P < 0.0001$), ranging from 29.2% of boys aged 11-13 (classes S1 to S2) to 39.3% of boys aged 13-15 (S3 to S4). These values are higher than those in a recent survey of young people in England. Weapon carrying in Lanarkshire was 70% higher for males than in the rural area of Perth and Kinross. Both males and females who had taken drugs were more likely to carry weapons (63.5% of male drug users versus 20.5% of non-users and 22.8% of female drug users versus 3.7% of non-users; both $P < 0.0001$). The proportions of males carrying weapons who used none, one, two, three or four, or five or more illegal drugs were 21%, 52%, 68%, 74%, and 92% respectively. A similar trend was found among females.

Conclusions Better information is needed on the nature and extent of weapon carrying by young people in the United Kingdom, and better educational campaigns are needed warning of the dangers of carrying weapons.

Introduction

After several high profile incidents, including the shooting at Columbine high school in the United States and the fatal stabbing of head teacher Philip Lawrence in the United Kingdom, concern has grown about young people carrying weapons. Several US studies have assessed weapon carrying among adolescents: in one, 15% of 10 269 adolescents carried a weapon,¹ in another study of 4137 students in South Carolina, 38% of males and 11% of females had carried a weapon,² and in another study of 26 225 college students 11% of males and 4% of females had carried a weapon within 30 days of the survey.³ In the

United Kingdom, a survey of 10 677 students found weapon carrying among 18% of males and 3% of females aged 11-12 and 29% of males and 9% of females aged 15-16.⁴

Previous research both in the United Kingdom and the United States has identified a close association between illegal drugs and weapon carrying among young people. Illegal drug use was found to be a strong predictor for weapon carrying among white adolescents in South Carolina.² In Chicago, 33% of students aged 10 to 11 years had easy access to illegal drugs and weapons in disadvantaged neighbourhoods.⁵ Among 14-15 year olds in the United Kingdom the proportion having friends who carried weapons was closely associated with the extent of illegal drug use.⁴

We investigated weapon carrying among young people in Scotland and whether there was an association with illegal drug use.

Participants and methods

We assessed data from research carried out from 1996 examining legal and illegal drug use among young people in Scotland.⁶⁻¹⁰ Briefly, the data are from three linked surveys: five schools in rural Perth and Kinross in 1997 (about 13% of eligible students), 12 schools in rural and urban Lanarkshire in 1998 (about 5% of eligible students), and three independent schools in central Scotland in 1996.

In each school and school year, classes were randomly selected. Each student completed a confidential questionnaire under exam conditions (desks separated) with the teacher absent, giving data on legal and illegal drugs, family circumstances, social activities, and weapon carrying. The questionnaire asked "Have you ever carried a weapon in case you got into a fight? (Yes/No). If yes, what kind of weapon(s)?" The absentee rates in Lanarkshire were 6% to 17%, and 9% for Perth and Kinross (no corresponding information was available for independent schools). Ethical approval for this research was obtained, and informed consent was given by students, parents, and school staff.

Statistical methods

We calculated the difference in proportions of students carrying weapons (any, bladed, or non-bladed) within schools between (a) males and females, (b) students using illegal drugs (yes or no), separately for males and females, and (c) school years S1 and S2 (aged 11-13)

and S3 and S4 (aged 13-15), again separately for males and females. We compared these differences across schools using paired one sample *t* tests (with approximate 95% confidence intervals).

Results

Table 1 shows a higher proportion of working class families in Perth and Kinross (52%) and Lanarkshire (61%) than in the independent schools (13%). The higher proportion of girls in independent schools reflects local difficulties in recruiting independent schools of mixed sex, leading to the inclusion of one all girls' school.

Weapon carrying by sex, age, and region

Weapon carrying was lower among females (8.6%) than males (34.1%) (difference 25.4%, 95% confidence interval 21.7% to 29.1%, $P < 0.0001$), and increased with age for males from 29.2% in S1 to S2 to 39.3% by S3 and S4 (10.2%, 4.4% to 16.0%, $P = 0.0019$) and for females from 7.1% to 10.3% (3.2%, -0.7% to 7.1%, $P = 0.10$). Weapon carrying also varied by region: 22.9% of males in the largely rural area of Perth and Kinross reported having carried a weapon compared with 38.8% of those in Lanarkshire and 32.6% from independent schools, with a similar pattern for females.

Weapon carrying and illegal drug use

Both males and females using illegal drugs are more likely to carry weapons: for males, 63.5% of drug users versus 20.5% of non-users (42.8%, 35.9% to 49.7%, $P < 0.0001$) and for females, 22.8% of drug users versus 3.7% of non-users (18.9%, 13.5% to 24.3%, $P < 0.0001$) (table 2). The proportion of males using none, one, two, three or four, or five or more illegal drugs who have carried weapons was 21%, 52%, 68%, 74%, and 92%. A similar trend was found in females. Males tended to become more heavily armed as the number of illegal drugs used increased, with the percentage carrying at least two weapons increasing from 3% for no drugs to 55% for five or more drugs (table 2).

Types of weapons being carried

Table 3 shows the types of weapons carried, classified as bladed (knives: flick, switch, stanley, craft, or hunting;

Table 1 Characteristics of students. Values are numbers (percentages) of students within stated category unless stated otherwise

	Independent	Perth and Kinross	Lanarkshire	Overall
Year of survey	1996	1997	1998	1996-8
No of schools	3	5	12	20
Students (% overall)	441 (14.1)	747 (23.9)	1933 (61.9)	3121 (100)
Males	92 (20.9)	389 (52.1)	971 (50.2)	1452 (46.5)
Females	349 (79.1)	358 (47.9)	962 (49.8)	1669 (53.5)
Mean (SD) age (years)	13.93 (1.25)	13.47 (1.13)	13.44 (1.14)	13.52 (1.17)
	n=321	n=656	n=1876	n=2853
Living in deprived area*	24 (7.5)	62 (9.5)	1044 (55.7)	1130 (39.6)
	n=437	n=720	n=1933	n=3090
Working class family†	56 (12.8)	371 (51.5)	1184 (61.3)	1611 (52.1)

*Carstairs deprivation category of at least 5 (data missing for 9% of students overall).
†Social classes IIIn, IIIm, IV, or V according to the Office of Population Censuses and Surveys (data missing for 1% of students overall).

Table 2 Weapon carrying by number of illegal drugs used. Values are numbers (percentages) of students

Group	No of illegal drugs used					Total*
	None	1	2	3 or 4	≥5	
Males	n=987	n=239	n=85	n=85	n=51	n=1447
1 weapon	174 (17.6)	87 (36.4)	39 (45.9)	41 (48.2)	19 (37.3)	360 (24.9)
>1 weapon	28 (2.8)	37 (15.5)	19 (22.3)	22 (25.9)	28 (54.9)	134 (9.2)
Any weapon	202 (20.5)	124 (51.9)	58 (68.2)	63 (74.1)	47 (92.2)	494 (34.1)
Females	n=1239	n=235	n=77	n=75	n=38	n=1664
Any weapon	46 (3.7)	36 (15.3)	16 (20.8)	25 (33.3)	20 (52.6)	143 (8.6)
All students	n=2226	n=474	n=162	n=160	n=89	n=3111
Any weapon	248 (11.1)	160 (33.8)	74 (45.7)	88 (55.0)	67 (75.3)	637 (20.5)

*Data missing for five males and five females.

machete; sword; razor) or non-bladed weapons (guns (air rifle, pistol, replica), blunt instruments (club, metal pipe), sports equipment (baseball bat, snooker cue), tools (screwdriver, hammer), and other weapons (catapult, knuckleduster)). Bladed weapons carried among males ranged from 16.0% in S1 to S2 to 22.9% in S3 to S4, (7.3%, 2.3% to 12.3%, $P = 0.0070$), and for females from 4.3% to 7.2% (2.9%, 0.1% to 5.7%, $P = 0.043$).

For both males and females the carrying of bladed weapons was higher among drug users than non-users and increased with the number of illegal drugs used: 11%, 27%, and 48% of males using none, one, and two or more illegal drugs respectively carried a bladed weapon. Similar patterns were found for non-bladed weapons (table 3).

Table 3 Type of weapon carried by type of school or region and number of drugs used. Values are numbers (percentages) of students

Group	Total No	Males		Total No	Females		Total No	All students		
		Blade	Non-blade		Blade	Non-blade		Blade	Non-blade	
Overall	1452	281 (19.4)	321 (22.1)	1669	94 (5.6)	74 (4.4)	3121	375 (12.0)	395 (12.7)	
School year:										
S1	374	40 (10.7)	69 (18.5)	442	9 (2.0)	15 (3.4)	816	49 (6.0)	84 (10.3)	
S2	366	78 (21.3)	68 (18.6)	444	29 (6.5)	21 (4.7)	810	107 (13.2)	89 (11.0)	
S3	390	87 (22.3)	87 (22.2)	399	32 (8.0)	16 (4.0)	789	119 (15.1)	103 (13.1)	
S4	322	76 (23.6)	97 (30.1)	384	24 (6.3)	22 (5.7)	706	100 (14.2)	119 (16.9)	
School type and region:										
Independent	92	27 (29.4)	7 (7.6)	349	25 (7.2)	10 (2.9)	441	52 (11.8)	17 (3.9)	
Perth and Kinross	389	66 (17.0)	43 (11.1)	358	9 (2.5)	13 (3.6)	747	75 (10.0)	56 (7.5)	
Lanarkshire	971	188 (19.4)	271 (27.9)	962	60 (6.2)	51 (5.3)	1933	248 (12.8)	322 (16.7)	
No of drugs*:										
0	987	108 (10.9)	114 (11.6)	1239	25 (2.0)	27 (2.2)	2226	133 (6.0)	141 (6.3)	
1	239	65 (27.2)	86 (36.0)	235	21 (8.9)	18 (7.7)	474	86 (18.1)	104 (21.9)	
>1	221	107 (48.4)	120 (54.3)	190	47 (24.7)	29 (15.3)	411	154 (37.5)	149 (36.3)	

*Data missing for five males and five females.

What is already known on this topic

In many areas there is widespread concern about the possible association between illegal drug use and violence

Previous research carried out in the United States has identified a close association between the carrying of weapons and use of illegal drugs by young people

Little comparative information is available on the possible relation between weapons and drugs in young people in the United Kingdom

What this study adds

Weapon carrying is comparatively widespread among young people in Scotland

Over a third of males surveyed and nearly a tenth of females had carried a weapon, and such weapon carrying was closely associated with the use of illegal drugs

A national educational campaign is needed, stressing the risks and dangers of weapon carrying among young people

Discussion

These data on weapon carrying and illegal drug use in adolescents are based on self report and so may contain both underreporting and overreporting. It is important to bear in mind that weapon carrying refers to ever having carried a weapon. With these limitations in mind the data must give cause for concern.

The west of Scotland has had an association with weapon carrying and gang fights for many years, immortalised in the "no mean city" account of life in Glasgow. On the basis of the data presented here, the culture of weapon carrying among young people seems to be continuing although it is not confined to any one city. It is far from clear why a substantial proportion of young people in Scotland feel the need to carry a weapon and this needs further investigation. Whatever the reasons, having a weapon potentially increases the risk of harm. Research in the United States has shown an association between involvement in violence and the use of illegal drugs.^{11 12} It is possible that a proportion of young people in Scotland who use illegal drugs will become involved in violence, and some of these may carry weapons.

Agencies working with young people need to better understand why some young people feel the need to carry weapons and to discourage this behaviour. Where such weapon carrying relates to the young person feeling vulnerable, it may need to be tackled in the context of broader approaches, for example, in relation to bullying. One report found that the carrying of weapons at school was associated with fights, having had goods stolen or damaged, and threats of injury with a weapon while at school.¹³

Organisers of events where young people congregate clearly need to be aware that some young people may be carrying a weapon and to take steps to reduce this likelihood. National information and educational campaigns into the dangers of weapon carrying are needed, targeted at young people and parents. Finally, although the UK home secretary has advised that adults should be more prepared to intervene when

young people misbehave, we suggest the need for caution as some young people may be carrying an offensive weapon.

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Contributors: NMCK initiated the study and wrote the first draft of the paper. JN carried out the statistical analyses and redrafted the paper in the light of comments from referees. Dr Marina Barnard and Dr Alasdair Forsyth developed the core instrument used in the school surveys and were involved in the data collection and coding. Mrs Lesley Reid supervised the part time interviewing staff associated with the research. Professor Neil McKeganey will act as guarantor for the paper.

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- 1 Lowry R, Powell K, Kann L, Collins J, Kolbe L. Weapon carrying, physical fighting and fight related injury among US adolescents. *Am J Prev Med* 1998;14:122-9.
 - 2 Valois R, McKeown R, Garrison C, Vincent M. Correlates of aggressive and violent behaviours among public high school adolescents. *J Adolesc Health* 1995;16:26-34.
 - 3 Presley C, Meilman P, Cashin J. Weapon carrying and substance abuse among college students. *J Am Coll Health* 1997;46:1:3-6.
 - 4 Balding J, Regis D, Wise A, Bish D, Muirden J. *Cash and carry: young people their friends and offensive weapons*. University of Exeter: Schools Health Education Unit, 1996.
 - 5 Komro K, Flay B, Hu F, Zelli A, Rashid J, Amowo S. Urban pre-adolescents report perceptions of easy access to drugs and weapons. *J Child Adolesc Subst Abuse* 1998;8:77-90.
 - 6 Barnard M, Forsyth A, McKeganey N. Levels of drug use among a sample of Scottish schoolchildren. *Drugs: Educ, Prev Policy* 1996;3:81-9.
 - 7 Forsyth AJM, Barnard M, Reid L, McKeganey NP. Levels of drug use in a sample of Scottish independent secondary school pupils. *Drugs: Educ, Prev Policy* 1998;5:157-68.
 - 8 Barnard MA, Forsyth AJM. Drug use among schoolchildren in rural Scotland. *Addict Res* 1998;6:421-34.
 - 9 McKeganey N, Norrie J. Pre-teen drug misuse in Scotland. *Addict Res* 1999;6:493-507.
 - 10 McKeganey NP, Forsyth A, Barnard M, Hay G. Designer drinks and drunkenness amongst a sample of Scottish schoolchildren. *BMJ* 1996;313:401.
 - 11 Wagner E. Substance use and violent behaviour in adolescence. *Aggress Violent Behav* 1996;1:375-87.
 - 12 Friedman A. Substance use/abuse as a predictor to illegal and violent behaviour: a review of the relevant literature. *Aggress Violent Behav* 1998;3:339-55.
 - 13 DuRant R, Kahn J, Beckford P, Woods E. The association of weapon carrying and fighting on school property and other health risks and problem behaviours among high school students. *Arch Paediatr Adolesc Med* 1997;151:360-6.
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Corrections and clarifications

ABC of arterial and venous disease: Acute limb ischaemia
In the section entitled "Saddle embolus" (p 765) in this article by Ken Callum and Andrew Bradbury (18 March, pp 764-7), an editing slip led to a presence rather than an absence of femoral pulses. The first sentence should have begun: "Patients with acute embolic occlusion of the aortic bifurcation have no femoral pulses..."

Immediate and long term effects of weight reduction in obese people with asthma: randomised controlled study
In this paper by Brita Stenius-Aarniala et al (25 March, pp 827-32) we inadvertently failed to remove a reference to error bars from the caption to figure 1. The graphs in the figure are correct; there should be no error bars. Moreover, Pertti Mustajoki, one of the authors, is a consultant in endocrinology (not pulmonary medicine).

Systematic reviews and meta-analyses on treatment of asthma: critical evaluation

In this paper by Alejandro R Jadad (26 February, pp 537-40) the first author's name in reference 27 slipped through wrongly spelt; the correct spelling is Hammarquist.