



## Short Report

## The socio-spatial distribution of alcohol outlets in Glasgow city

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## ABSTRACT

**Aims:** The aim of this study was to examine the distribution of alcohol outlets by area deprivation across Glasgow, Scotland.

**Methods:** All alcohol outlets were mapped and density per 1000 residents and proximity to nearest outlet calculated across quintiles of area deprivation.

**Results:** The socio-spatial distribution of alcohol outlets varies by deprivation across Glasgow but not systematically. Some deprived areas contain the highest concentration while others in similar deprivation quintiles contain very few.

**Conclusions:** Considerations of the local context are important in examining access to alcohol but more research is also required on purchasing behaviour.

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## Introduction

Alcohol is a significant and growing problem in Scotland. Alcohol-related death rates in 2002–2004 for males and females in Scotland were around double the rate for the UK as a whole (Office for National Statistics, 2007). Cirrhosis mortality rates in Scotland are now among the highest in western Europe (Leon and McCambridge, 2006). At a local level, Glasgow City had the highest alcohol-related death rate among both men and women in the UK in 1998–2004 (Office for National Statistics, 2007). Alcohol-related problems are estimated to cost Scotland over £1 billion every year (Scottish Executive, 2004a).

UK sales of alcohol are rising, in 1995 an average of 9 L of pure alcohol was sold per head of population aged 15 and over in the UK, this had risen to 11 L per head by 2005 (British Beer and Pub Association Statistical Handbook 2007 cited in Catto and Gibbs, 2008). Paradoxically, population surveys conducted during that period suggested a decline in alcohol intake rather than an increase. However, a recent study reported that alcohol intake has been underestimated in UK studies, and currently it is estimated that over a third of male adults and just under a quarter of adult females in Scotland usually consume more than the recommended limit of units per week (Scottish Government, 2008). Among women in Scotland, weekly levels of consumption are highest in

women in managerial and professional households; whereas for Scottish men there is no consistent pattern by socioeconomic classification. Binge drinking is also more common in the most deprived areas in Scotland with 46% of men and 34% of women reporting exceeding recommended maximum levels (8 units for men, 6 units for women) in one day (Scottish Executive, 2005).

Alcohol problems occur in all social groups but there is a marked socioeconomic gradient in alcohol-related morbidity. People from the most deprived areas in Scotland are three times more likely to be admitted to hospital with an alcohol-related diagnosis than people from the most affluent areas, while men from the most deprived areas are six times more likely to die from an alcohol-related condition than men from the most affluent areas (Information Services Division, 2007).

Sales from supermarkets and off-licenses now account for nearly half the amount of alcohol sold in the UK (Euromonitor, 2007). Some studies at the city level, mainly North American, have suggested that the density of alcohol outlets may be higher in poorer neighbourhoods (Duncan et al., 2002, Gorman and Speer, 1997; Pollack et al., 2005; Romley et al., 2007). Studies across nations (New Zealand) showed a similar pattern (Hay et al., 2009; Pearce et al., 2008). However, little is known about the extent to which alcohol outlets are more prevalent in deprived areas in the West of Scotland. Living near alcohol outlets might encourage higher intake of alcohol or expose residents to the anti-social behaviour of others who come to buy alcohol (Forsyth et al., 2007; Scribner et al., 1999; Treno et al., 2001). There have been recent calls for a better understanding of the places where problem

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drinkers and drinking are produced (Holloway et al., 2008; Kneale and French, 2008).

In this study we set out to examine the distribution of alcohol outlets by deprivation across the city of Glasgow, in the West of Scotland. We explore this by a variety of spatial scales (small areas and larger neighbourhoods or localities), as it has been noted that the extent to which area of residence may be important for health may depend on the spatial scale and neighbourhood boundaries used (Flowerdew et al., 2008). This work builds on a programme of research we have been conducting on features of neighbourhoods that might influence health and the ability to lead a healthy life, including access to fast food outlets, supermarkets, shops and recreation facilities (Ellaway et al., 1997, 2007; Ellaway and Macintyre, 1996, 2000; Macdonald et al., 2007; Macintyre et al., 2008; Sooman et al., 1993).

## Methods

A list of alcohol outlets in Glasgow City with street addresses was obtained from Glasgow City Council in 2006 and unit

postcodes were found for every outlet. The list included seven categories of outlet: public houses, off-sales (including supermarkets), private members' clubs (e.g. social clubs, sports clubs, student unions, etc.), entertainment (e.g. bingo halls, casinos, concert halls, nightclubs, etc.), restaurants, refreshment (café style premises where alcohol may be served with food) and hotels.

### Spatial scales

#### Data zones

Look-up tables were used to link the unit postcodes to Scottish data zones, the key small-area statistical geography in Scotland (Scottish Executive, 2004b). Data zones are groups of 2001 Census output areas and the majority have population between 500 and 1000 residents. They nest within local government boundaries, and where possible, they have been made to respect physical boundaries and natural communities, have a regular shape and contain households with similar social characteristics.

There are 694 data zones in the Glasgow City Council boundary, with a mean population of 832 (range 248–2243) and a mean area of 25.2 ha (Scottish Executive, 2004b). For each data

**Table 1**  
Per Scottish index of multiple deprivation (SIMD) quintile: number of alcohol licences; mean number per 1000 residents (range); mean distance to nearest (range).

		Number	Mean number per 1000 residents (range)	Mean distance (metres) to nearest resource (range)
<i>All alcohol licenses</i>				
SIMD quintile	1 Most affluent	317	2.54 (0–43)	407 (10–1581)
	2	718	5.94 (0–271)	319 (0.8–3098)
	3 Middling	463	3.79 (0–70)	306 (0.3–1568)
	4	288	2.50 (0–13)	366 (0.5–2273)
	5 Most deprived	435	3.87 (0–105)	372 (0–1441)
	Total	2221	3.73 (0–271) <i>F</i> =1.62, <i>p</i> =0.168 <i>F</i> =2.14, <i>p</i> =0.094	354 (0–30.98) <b><i>F</i>=2.69, <i>p</i>=0.030</b> <b><i>F</i>=3.56, <i>p</i>=0.014</b>
<i>Public houses</i>				
SIMD quintile	1 Most affluent	103	0.80 (0–22)	696 (10–2674)
	2	272	2.22 (0–133)	556 (14–3098)
	3 Middling	168	1.34 (0–30)	590 (2–2059)
	4	103	0.88 (0–10)	605 (14–2273)
	5 Most deprived	146	1.30 (0–47)	656 (25–1904)
	Total	792	1.31 (0–133) <i>F</i> =1.14, <i>p</i> =0.337 <i>F</i> =0.05, <i>p</i> =0.828	621 (2–3098) <i>F</i> =2.00, <i>p</i> =0.093 <i>F</i> =0.07, <i>p</i> =0.794
<i>Off-sales<sup>a</sup></i>				
SIMD quintile	1 Most Affluent	88	0.71 (0–10)	545 (26–2779)
	2	180	1.53 (0–31)	432 (42–4403)
	3 Middling	156	1.34 (0–12)	401 (6–1606)
	4	128	1.14 (0–6)	445 (0.5–2273)
	5 Most deprived	180	1.72 (0–10)	443 (0–1662)
	Total	732	1.29 (0–31) <b><i>F</i>=4.24, <i>p</i>=0.002</b> <b><i>F</i>=7.42, <i>p</i>=0.007</b>	453 (0–4403) <b><i>F</i>=3.01, <i>p</i>=0.018</b> <i>F</i> =3.71, <i>p</i> =0.055
<i>Others<sup>b</sup></i>				
SIMD quintile	1 Most affluent	134	1.10 (0–20)	585 (25–2685)
	2	297	2.43 (0–127)	529 (0.8–3161)
	3 Middling	155	1.23 (0–38)	604 (0.3–2113)
	4	60	0.51 (0–7)	724 (68–2591)
	5 Most deprived	117	0.95 (0–50)	821 (48–2012)
	Total	763	1.25 (0–127) <i>F</i> =1.93, <i>p</i> =0.104 <i>F</i> =1.86, <i>p</i> =0.173	652 (0.3–3161) <b><i>F</i>=8.21, <i>p</i>=0.000</b> <b><i>F</i>=26.24, <i>p</i>=0.000</b>

<sup>a</sup> Includes outlets only selling alcohol, e.g. Haddows and also supermarkets and other shops selling alcohol.

<sup>b</sup> Includes clubs (e.g. social clubs, sports clubs, student unions, etc.), entertainment (e.g. nightclubs, bingo halls, casinos, concert halls, etc.), restaurant, refreshment and hotels.

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