

Substance misuse in acute general medical admissions

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Summary

We conducted a prevalence study of current substance misuse amongst acute general medical admissions, and compared the sociodemographic profile of this group of patients with total admissions and the local catchment population. Patients were included in the study if they were resident in the Lambeth, Southwark and Lewisham (LSL) Health Commission catchment area and were aged between 18 and 85 years. The prevalence of non-dependent misuse was of particular interest. Of 2988 acute admissions, 609 (20%) were identified as misusing alcohol and/or drugs, 277 (9%) being identified by the admitting doctor and 332 (11%) being identified by means of a Health and Lifestyle Questionnaire

(HLQ) which included the Alcohol Use Disorders Identification Test (AUDIT). The majority 437 (72%) of the identified patients had an alcohol problem. A smaller proportion, 116 (19%) were currently using illegal drugs and 56 (9%) were polydrug users. Compared with patients who misused either drugs or alcohol, alcohol misusers were more likely to be older and Irish, whereas users of illegal drugs were more likely to be younger and Black. Significantly more 'at risk' drinkers were identified by the AUDIT questionnaire than by the admitting doctor. This study supports the policy of routine screening for health-damaging behaviours and the implementation of health promotion strategies in general hospitals.

Introduction

Heavy alcohol consumption is associated with a variety of physical disorders and the importance of alcohol-related disease in hospital practice has been previously demonstrated.^{1–7} It is estimated that 20% of all adult in-patients admitted to general hospital settings may be classified as harmful or hazardous drinkers, and are unlikely to be detected unless specifically assessed.⁸ As alcohol-related problems may develop insidiously, the routine detection of individuals drinking above the recommended levels has been advocated in both primary care and hospital settings, with the aim of modifying drinking habits.⁸

Although the link between alcohol use and hospital practice has been well demonstrated, the relationship with other substance misuse is less well-documented. Illegal drug misuse is considerably under-reported although much is known about the nature and number of associated negative con-

sequences.⁹ Most studies suggest rather low levels of illegal drug use in the general population, particularly current or recent use.⁹ In a review of several large-scale drug surveys, Baker and Marsden¹⁰ concluded that at least 6% of the population will take a drug illicitly in any one year. Notifications (mainly by GPs) to the Home Office Addicts Index for the three South London Boroughs, Lambeth, Southwark and Lewisham, indicate that heroin is the most common drug of addiction and that rates of notification for this area are above the UK average.¹¹ However, the number of notifications probably represents only 20% of opiate and cocaine addicts, and it is likely that figures for drug use are higher.¹²

This study reports the sociodemographic profile of substance misusers admitted to an inner London teaching hospital. The main aim of the study was to identify current substance misuse amongst acute general medical admissions and to compare the sociodemographic

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profile of this group of patients with overall admissions and with the local catchment area population.

Methods

Patient sample

Between 7 January 1995 and 31 January 1997, 2988 consecutive admissions to one of three general medical firms at King's College Hospital were identified for inclusion in the study. Patients resident in the Lambeth, Southwark and Lewisham (LSL) Health Commission catchment area aged between 18 and 85 years were included. Patients with multiple admissions were recorded only once. Recruitment was extended to a second medical firm in June 1996, when the pool of 'new' patients diminished due to multiple readmissions. Severely ill patients were excluded.

Patient identification

Substance misusers identified by the admitting doctor were described as drug- or alcohol-dependent in the notes, although the criteria used by physicians to identify dependency were not clearly defined. Patients not identified as substance misusers by the admitting doctor were asked to complete a short (10 min) Health and Lifestyle Questionnaire (HLQ), incorporating questions on alcohol, smoking, diet, exercise, illegal drug use and alternative medicine. The Alcohol Use Disorders Identification Test (AUDIT)¹³ a 10-item questionnaire designed for the early detection of hazardous and harmful drinkers was embedded in the alcohol section of the HLQ. Patients scoring eight or above on the AUDIT were identified as problem drinkers, in line with previous work.¹⁴ The section of the HLQ focusing on illegal drug use included questions on the frequency and type of drug(s) used. This was used to screen for drug use. Reasons for non-completion of HLQ screening questionnaire included: identified by admitting doctor in medical notes as substance misuser (277, 9%); death (77, 3%); severity of condition precluding screening (248, 8%); refusal (78, 3%); psychiatric disorder (including overdose) (285, 10%); early discharge (87, 3%), and other (30, 1%).

Patients identified as misusing alcohol and/or drugs either by the admitting doctor or by the HLQ, were compared with those lacking a substance misuse history. Sociodemographic data and medical diagnosis were taken from the medical notes. The ethnicity of patients was analysed according to categories used in the 1991 census¹⁵ and the ethnic breakdown of the study group population compared to the LSL catchment population. The relationship

between substance misuse and physical illness was investigated using the diagnostic categories outlined in the International Classification of Disease (ICD-10).¹⁶ Amongst the alcohol group, specific alcohol-related diagnoses and categories known to have an association with heavy alcohol consumption, such as alcoholic liver disease, mental and behavioural disorders due to alcohol use, the toxic effect of alcohol and problems with lifestyle due to alcohol use, were analysed to determine their prevalence within the alcohol misuse group. Using ICD-10 diagnostic categories, the primary diagnoses of the alcohol users identified by the admitting doctor were compared with alcohol users detected by AUDIT. Diagnostic comparison was also performed between users of illegal drugs who were identified by the admitting doctor and by the screening questionnaire. Diagnostic comparison was also performed between the two groups of polydrug users (defined in this study as the use of alcohol plus other illegal drug/s).

Statistical methods

Patients identified as misusing alcohol and/or drugs were compared by logistic regression analysis with those lacking a substance misuse history. Two logistic regressions were performed. The first compared alcohol misusers and patients with no substance misuse history and the second compared the combined drug and polydrug misusers with patients lacking a substance misuse history (drug and polydrug users were combined, as they shared similar demographic characteristics). The logistic regression for alcohol users used the independent variables of age, gender, marital status and ethnicity to predict alcohol misuse. For the second logistic regression, the same variables were entered, although there were fewer ethnic categories. As the number of cases in some of the ethnic categories was small, it was decided to condense these into 'other', making four categories of ethnicity instead of eight.

Results

Of 2988 consecutively-admitted patients (1557 male and 1431 female), a total of 609 (20%) were identified as having a current substance misuse history. Of these, 277 (9%) were identified by the admitting doctor in the medical notes as having a current substance misuse history and 332 (11%) were identified as substance misusers using the HLQ (Figure 1). Substance misuse problems most commonly involved alcohol (437 patients, 72%) (Table 1). Comparison of patients who misused alcohol with those misusing drugs indicated differences on a number of variables. Problem drinkers were more likely to be male (340,

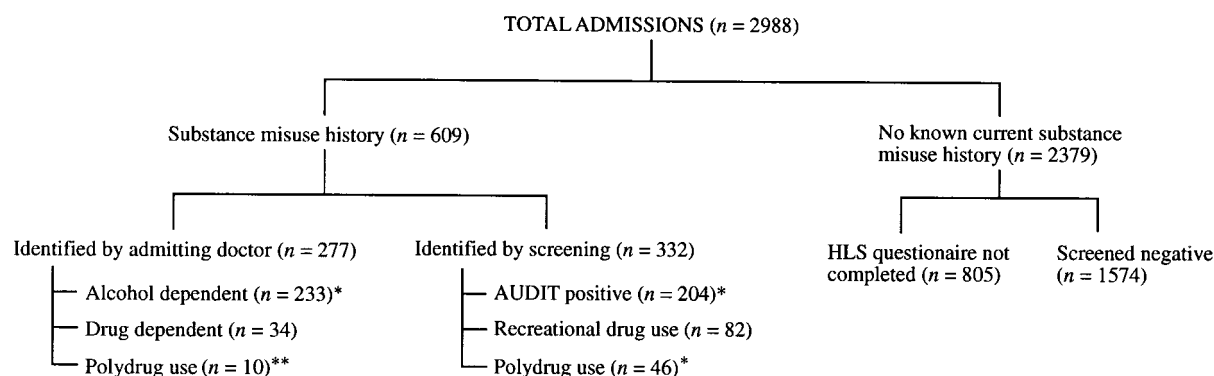


Figure 1. Flow chart of methods used to identify patients as substance misusers. *Alcohol misuse group ($n=437$); **Polydrug misusers are patients who misuse alcohol plus one or more illegal drugs ($n=56$).

78%) than female (97, 22%) (OR 4.1; 95%CI 3.16–5.22) (Table 2a). In addition, the risk of problem drinking increased with age with 71% of male and 60% of female problem drinkers, being 45 years or more (OR for a 10-year age difference was 1.3; 95%CI 1.24–1.44). The illegal drug users were younger, with 102 (88%) being 44 years or less, and again predominately male (61, 60%) (Table 1). Of the polydrug-using group, 39 (70%) were male and 46 (82%) were aged 44 years or under (Table 1). Thus males were at greater risk of illegal drug and polydrug use than females (OR 2.5; 95%CI 1.72–3.57) (Table 2b). In contrast with the situation for alcohol misusers, the odds of being a drug misuser decreased with increasing age (OR for a 10-year age difference was 0.4; 95%CI 0.34–0.47).

Marital status

Alcohol misusers were more likely to be married than divorced (OR 2.1; 95%CI 1.47–2.89) or living with others (OR 1.7; 95%CI 1.08–2.67) when compared with patients lacking a substance misuse history (Table 2a). The marital status of illegal drug and polydrug users was not significantly different from that of patients lacking a substance misuse history.

Ethnicity

Eleven per cent of the alcohol misusers admitted were Irish, which is an over-representation, given that only 4% of the LSL population is Irish (OPCS, 1991).¹⁵ Overall, one-third of the Irish patients admitted were problem drinkers (including six polydrug misusers) compared to one-eighth of the other white patients. After controlling for age, gender, and marital status, those with an alcohol problem were twice as likely to be Irish than another White category (OR 2.1; 95%CI 1.42–3.05) (Table 2a). The risk of being a problem drinker was three times higher in the White in-patient population than in the Vietnamese

and 'Other Asian' in-patient population (OR 3.1; 95%CI 1.07–8.99) although the numbers in the latter category were small. The proportion of Black patients (21%), reflected the proportion resident in the LSL catchment area, but only 10% of problem drinkers were Black. Thus the risk of being a problem drinker was nearly four times higher in the White in-patient population compared to the Black in-patient population (OR 3.8; 95%CI 2.67–5.43). In contrast, Black patients were nearly twice as likely as White patients to be illegal drug or polydrug users (OR 1.8; 95%CI 1.23–2.7) (Table 2b).

Physical illness

The most commonly occurring ICD diagnostic code amongst the 2988 patients admitted was cardiovascular disease (713, 24%), followed by respiratory disease (500, 17%). Of the number of patients identified as alcohol misusers by the admitting doctor, 48 (21%) had a primary alcohol-related diagnosis and 103 (44%) had a secondary alcohol-related diagnosis, compared to 1 (1%) and 19 (9%), respectively amongst the patients identified by AUDIT (Table 3). Cardiovascular disease was the most commonly occurring disease amongst the AUDIT-positive patients (63, 31%). Amongst the 34 patients identified by the admitting doctor as illegal drug misusers, 16 (47%) were diagnosed as having injuries relating to poisoning and other external causes (Table 3). Of the illegal drug misusers identified through screening, disease of the respiratory system was the most commonly occurring category in 16 (20%) patients. The most commonly occurring category amongst the polydrug users identified by the admitting doctor was injuries relating to poisoning (3, 30%). In addition, 3 (30%) of this group had a secondary alcohol-related diagnosis. Polydrug users identified by screening most frequently presented with diseases of the digestive system (11, 24%). Of the 128 patients identified as illegal drug/polydrug users through screening, 119

Table 1 Demographic characteristics of doctor identified substance misuse patients and screened patients (n=609)

Patient characteristics	Alcohol dependent n=233 (39%)		AUDIT positives n=204 (33%)		Drug dependent n=34 (6%)		Screened positive for illegal drug misuse n=82 (14%)		Polydrug dependent n=10 (2%)		Screened polydrug n=46 (8%)	
<i>Gender</i> M:F	176 (76)	57 (24)	164 (80)	40 (20)	19 (56)	15 (44)	54 (66)	28 (34)	7 (70)	3 (30)	32 (70)	14 (30)
<i>Age</i> (mean years/sd)	48 (13.2)		58 (16.3)		32 (8.2)		31 (12.0)		33 (10.7)		33 (11.2)	
18–44	90 (39)		49 (24)		31 (91)		71 (87)		9 (90)		37 (80)	
45–85	143 (61)		155 (76)		3 (9)		11 (13)		1 (10)		9 (20)	
<i>Marital status</i>												
Married	63 (27)		89 (44)		9 (27)		15 (18)		1 (10)		6 (13)	
Divorced/separated	48 (21)		27 (13)		2 (6)		5 (6)		3 (30)		6 (13)	
Lives with other	20 (9)		19 (9)		9 (27)		9 (11)		2 (20)		10 (22)	
Single/lives alone	73 (31)		41 (20)		13 (38)		53 (65)		2 (20)		22 (48)	
Widowed	16 (7)		27 (13)		–		–		2 (20)		2 (4)	
<i>Ethnicity</i>												
White n/s	206 (88)		175 (86)		29 (85)		39 (48)		9 (90)		38 (83)	
Black n/s	22 (9)		20 (10)		3 (9)		40 (49)		–		6 (13)	
Indian	2 (1)		4 (2)		–		–		–		–	
Pakistani	–		–		–		–		–		–	
Bangladeshi	–		–		–		–		–		–	
Chinese	–		–		–		–		–		–	
Other Asian	1 (0)		3 (1)		–		2 (2)		–		1 (2)	
Others	–		2 (1)		–		1 (1)		–		1 (2)	
Irish*	20 (10)		29 (17)		–		2 (5)		–		7 (18)	

*Irish are quoted by LSL as a separate ethnic group. NB They form part of the White non-specified (n/s) group and are presented as a percentage of that group.

Table 2 Significant results from logistic regression analysis—dependent variable categories. **a** Alcohol misuser ($n=437$) or person with no substance misuse history ($n=2379$). **b** Drug/polydrug misuse ($n=172$) or person with no substance misuse history ($n=2338$)

Variables in regression	Significance	Odds ratio	95% CI
a			
Age (values for 10-year age difference)	<0.00	1.3	1.24–1.44
Gender (M:F)	<0.00	4.1	3.16–5.22
Marital Status	<0.00		
Married vs. divorced/separated	<0.00	2.1	1.47–2.89
Married vs. lives with other	0.02	1.7	1.08–2.67
<i>Ethnicity</i>			
White vs. Black	<0.00	3.8	2.67–5.43
Irish vs. White	<0.00	2.1	1.42–3.05
White vs. Vietnamese and Other Asian	0.04	3.1	1.07–8.99
b			
Age (values for 10-year age difference)	<0.00	0.4	0.34–0.47
Gender (M:F)	<0.00	2.5	1.72–3.57
<i>Ethnicity*</i>			
Black vs. White	<0.00	1.8	1.23–2.7

* Ethnic categories with small number of cases in each were condensed into 'other'. Categories condensed included Indian, Pakistani, Bangladeshi, Chinese and Vietnamese/other Asian.

(93%) used cannabis. Of these, 23 (18%) had a primary diagnosis of respiratory disease and 14 (11%) had sickle-cell disease.

Alcohol history

Of the 2988 patients in the study, 935 (31%) did not have an alcohol history documented in their medical notes. Drinkers identified by the admitting doctor were alcohol-dependent, whereas those identified by AUDIT were hazardous drinkers, 'at risk' from their drinking behaviour (Table 1). Of the 204 patients identified as alcohol misusers through screening, none were identified as 'at risk', although 168 (82%) had an alcohol history documented in their medical notes by the admitting doctor (Figure 1). A similar proportion of problem drinkers could therefore be assumed amongst the 805 (27%) patients who did not complete a screening questionnaire (Figure 1). In addition, 100 (6%) patients who were AUDIT-negative described themselves as having had a previous alcohol problem. Of the excluded subjects

not screened 88, (11%) were described in the medical notes as having had a previous alcohol history.

Illicit drug use history

Cannabis was the most commonly used illegal drug and was the only drug used in 79% of screened drug-users. Other drugs used by this group included amphetamines (9, 11%), ecstasy (8, 10%) and cocaine (8, 10%). Amongst the drug misusers identified by doctors, 31 (91%) were i.v. drug-users, mainly using heroin. Of this group, eight (24%) used heroin only, 12 (35%) used heroin and methadone and seven (21%) used heroin and cocaine. After alcohol, the drug most commonly used by the 10 polydrug misusers identified by the doctor was heroin and/or methadone. Amongst the screened polydrug misusers, 41 (89%) used cannabis in addition to alcohol and 15 (32%) used alcohol and two or more illegal drugs.

Discussion

In this study, 20% of acute medical admissions to an inner London teaching hospital were currently misusing alcohol and/or drugs, of whom 14.6% were using alcohol only, 3.8% were using illicit drugs only and 1.8% were polydrug users. The admitting doctor identified 46% of such patients, and a further 54% were identified using a simple screening questionnaire which included the AUDIT and a general drug-use screen. Those patients identified by the admitting doctor were described as either drug- or alcohol-dependent in the case notes, although the criteria used by physicians to identify dependency were not clearly defined. These patients were obvious heavy drug and alcohol misusers, whose reason for admission was usually related to their substance misuse. There were differences between alcohol misuse patients identified by AUDIT and those identified by the doctors. Patients identified by AUDIT were at increased risk of physical complications due to their drinking, although to a lesser degree than the overtly 'alcohol-dependent' patients identified by the doctor. In addition, there were also differences between those identified as alcohol misusers and the illegal drug and polydrug misusers. Alcohol misusers were more likely to be older and to be Irish, and less likely to be divorced and living alone. Illegal drug and polydrug misusers were more likely to be young and Black.

Although the Irish make up only 4% of the white population in the local catchment area, they constituted 11% of all problem drinkers. This confirms previous data reporting an association between alcohol misuse, mental health and social problems in

Table 3 ICD 10 diagnostic categories of all patients and substance misusers ($n=609$)

ICD 10 categories	Alcohol dependent $n=233$ (8%)	AUDIT positives $n=204$ (7%)	Drug dependent $n=34$ (1%)	Screened positive for illegal drug misuse $n=82$ (3%)	Polydrug dependent $n=10$ (0%)	Screened polydrug $n=46$ (2%)
Primary alcohol-related diagnosis	48 (21)	1 (1)	–	–	1 (10)	–
Secondary alcohol-related diagnosis	103 (44)	19 (9)	–	1 (1)	3 (30)	4 (9)
Neoplasm	5 (2)	6 (3)	–	–	–	1 (2)
Diseases of the circulatory system	16 (7)	63 (31)	2 (6)	8 (10)	2 (20)	5 (11)
Diseases of the respiratory system	15 (6)	44 (22)	5 (15)	16 (20)	–	7 (15)
Diseases of the digestive system	41 (18)	29 (14)	–	5 (6)	2 (20)	11 (24)
Injury, poisoning and other external causes	32 (14)	8 (4)	16 (47)	6 (7)	3 (30)	3 (7)

Irish individuals admitted to mental hospitals for alcohol problems.^{17,18} Irish immigrants have historically been unskilled workers who settled in inner-city areas, where social isolation and environmental factors may have contributed to increased alcohol consumption and mental health problems.¹⁹ However, older Irish immigrants similar to the ones in this study may not be representative of the younger generation of Irish people who have migrated to the UK in recent years. Only 10% of problem drinkers in this study were of Black ethnicity. There is a widespread belief that alcohol prevention and treatment services are under-used by Black people and other ethnic groups, but evidence to support this perception is mixed, indicating both under- and over-use.²⁰ Our study suggests that even after controlling for age and gender, the proportion of problem drinkers amongst the local Afro-Caribbean population is small compared to that of the White population. However, young Black males were over-represented in the illegal-drug-and polydrug-using groups.

Several medical conditions are associated with alcohol consumption. That hospital doctors do not routinely screen for problem drinkers on admission, has been extensively documented.²¹⁻²³ Less than one quarter of the study patients identified as alcohol misusers had been admitted with a primary alcohol-related diagnosis, a finding consistent with other studies in this area.^{1,4,5} The duration of heavy drinking necessary to cause physical damage varies greatly between individuals, and as far as liver disease is concerned, can be influenced by other aetiological factors.^{24,25} The risk of developing cardiovascular disease is believed to increase with higher levels of consumption, and may account for 10-15% of cases of hypertension with consequent risks of stroke and heart disease.²⁶ Cardiovascular disease was the most common primary diagnosis amongst the patients identified by AUDIT. Six per cent of the total patients screened used illegal drugs, with cannabis being the most commonly abused drug. The health risks of cannabis are predominantly associated with its use with tobacco and also the risk of exposure to more hazardous drugs.²⁷

The characteristics of patients with alcohol and with illegal drug use differed. Alcohol misusers were older and were more likely to be Irish, whereas illegal drug and polydrug users were more likely to be young and Black. Substance misuse most commonly involved alcohol, although the formal prevalence of direct alcohol-related diagnosis as taken from patient's notes was low. Patients identified with the AUDIT were at increased risk of physical complications, but to a lesser degree than overtly alcohol-dependent patients. As alcohol misuse contributes to many medical problems, and 'at risk'

individuals are still not regularly identified by doctors on admission, we recommend the routine use of the AUDIT in the general hospital. We have shown that the AUDIT has successfully identified a significant proportion of heavy drinkers at an earlier stage than is usual in clinical practice. This may have implications for public health strategies targeted at reducing alcohol consumption and decreasing the risk for alcohol-related physical, psychological and social complications. Likewise, illegal-drug misusers identified by screening are also at increased risk of physical complications resulting from tobacco use and/or exposure to more hazardous drugs. The results of this study support routine screening for health damaging behaviours and the implementation of health promotion strategies in general hospitals.

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