Brief report

Prevalence of substance misuse comorbidity in an Irish university training hospital

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Abstract

Objective: Substance misuse complicates an individual's management in adult Mental Health services. This study aimed to examine both the overall prevalence of substance misuse in those admitted to the psychiatric unit and additionally those admitted with a primary diagnosis and comorbid substance misuse. The study focuses on the associated diagnoses and demographics in 100 consecutive admissions to an acute psychiatric unit in an Irish university hospital.

Method: Clinical notes were reviewed independently by two members (one being a doctor), of the multi-professional research team within four days of their admission. Substance misuse proximal to the/at the time of admission (reflecting the current usage) was noted.

Results: The combined prevalence of mental illness and substance misuse was 47% (CI 37-57%). Twenty two out of 100 (22%, CI 14-32%) were admitted primarily for the management of substance misuse and dependence (plus psychosocial reasons). Twenty-five of the patients admitted with a primary psychiatric illness (25%, CI 17-31%) were discovered to have comorbid substance misuse. At risk groups were found to be males and aged under 45 years.

Conclusion: Our study demonstrates the importance of screening and identification for substance misuse in psychiatric inpatient units; and consequently, the need for individual case management, additional development of dual diagnosis services and accurate patient data reporting to facilitate forward service-planning.

Key words: Prevalence; Substance; Alcohol misuse; Comorbidity psychiatry inpatient.

Prevalence of substance misuse comorbidity in Irish university training hospital

Substance misuse complicates an individual's management in adult Mental Health services. Comorbidity of mental health disorder and substance misuse is well established,[1,2,3] and such comorbidity has been associated with increased psychiatric admissions, violence, suicidal behaviour, excess service costs and poor treatment outcome.[4,5,6,7]

The improved management of mental health disorder and comorbid substance misuse is currently a National Health Service (NHS) priority in England and is an important recommendation by the research unit of the Royal College of Psychiatrists of UK, and the expert group on mental health policy in Ireland.[8,9,10] Often it is under-reported by patients, but also poorly identified by the services and unfortunately a significant number of patients with comorbidity receive no relevant dual diagnosis specialist intervention.[11,12,13]

There is limited reporting about the prevalence of comorbidity of substance misuse in the Irish psychiatric inpatient population. European and American studies which were conducted in the last decade, were aimed at predominantly urban-centred psychiatric patient populations, and reported a prevalence of comorbid alcohol misuse/dependence of/in up to 50% and comorbid illicit substance/drug misuse (mainly cannabis) in up to 27% of patients. These reports vary though depending upon the setting; in- or outpatient/high support hostel; methodology used; self-report/interview/biological measures, and finally also depending on gender and age of the population studied.[12-17]

In this report, we did not use the term 'Dual Diagnosis' (serious mental health disorder and substance misuse), which is used in North American literature, as patients are admitted to our psychiatric unit not only for serious mental health disorders but also for crisis intervention associated with for example personality disorders, depression, anxiety, and psychosocial reasons.

Ireland has one of the highest per capita alcohol consumptions in Europe.[18] Ireland also tops the country scale for heavy drinking (binge-type) in Europe.[19,20] All psychiatric units in Ireland compile reports/provide statistics for the Health Research Board (HRB) and these are published annually. These reports rely on the accurate reporting from the wards and mostly account for the primary diagnosis and hence comorbidity of substance misuse may be missed.[21]

This study aimed to examine both the overall prevalence of substance misuse in those admitted to the psychiatric unit and additionally those admitted with a primary psychiatric diagnosis and also newly identified comorbid substance misuse.

The study focused on the associated/additional diagnoses and demographics in 100 consecutive admissions to an acute psychiatric unit in an Irish university hospital. Within this sample we looked at the reason for admission across three patient groups; those with a diagnosis of substance misuse, substance misuse comorbidity and those identified to have no comorbidity, ie. a single mental health diagnosis only.

Method

The acute inpatient unit in Mercy University Hospital (MUH) caters for a predominantly urban population of approximately 130,000, on the north side of Cork city and has a high index

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Table 1: Reason for admission; primary substance misuse and sequelae, (n = 22), admissions for both mental health disorder and substance misuse, comorbid, (n = 25) and admissions with no co-morbid substance misuse (n = 53)*

Patient factors	n = 22	n = 25	n = 53	Significance
Reason for admission	Substance misuse only	Comorbid substance disorder only	Primary mental health disorder only	Odds Ratio (CI)
Age < 45yrs	19(86%)	22(88%)	28(53%)	p < 0.001
Age > 45yrs	3(14%)	3(12%)	25(47%)	OR 6.1(CI 2.2-16.8)
Male	14(65%)	18(68%)	22(42%)	p < 0.01
Females	8(35%)	7(32%)	31(58%)	OR 3(CI 1.3-6.8)
1st admission	7 (29%)	7(28%)	14(29%)	Not significant
Readmission	15(71%)	18(72%)	39(71%)	

** Statistically significant (comparison of substance misuse (n = 47) vs. no substance misuse (n = 53)*

of social deprivation and a high number of annual admissions (705 in the year 2007; the admission rate being 543 per 100,000 population). The population is served by five generic general adult psychiatry (GAP) teams in five different geographically distinct sectors. There was neither a psychiatry of old age team nor addiction psychiatry team attached to this service. Patients aged over 65 years were managed by their sector general adult psychiatry and are included in this study.

The study was undertaken prior to setting up of Home Based Crisis Resolution Team (HBCT), in November 2006 and focused on the North-east (NE) and city North-west (NW) sectors which accounted for ~60% admissions to the unit in 2007.

Clinical notes were reviewed independently by two members (one being a doctor), of the multi-professional research team within four days of their admission. These team members were both from allied health care professionals, nursing and medical personnel and they took no role in admission or management of the individual cases. The admitting doctor was unaware that this study was being undertaken. Ethical committee approval was not required since this study was done as a part of survey of admissions, and the research team did not interview any inpatients.

Patient demographics were noted and admission diagnoses were grouped in five broad categories:

1) Substance misuse/dependence
2) Depression and or anxiety
3) Psychosis (including bipolar affective disorder)
4) Personality disorders
5) Others.

Substance misuse proximal to the/at the time of admission (reflecting the current usage) was also noted.

The comorbid substance misuse data were divided into three categories:

1) Alcohol misuse,
2) Other single substance misuse
3) Poly-substance misuse.

Our data was checked with the quarterly returns of the National Psychiatric Inpatient Reporting System, to the (HRB), Dublin, Ireland.

Statistical analysis was undertaken using the Chi-squared test, to find the 95% confidence intervals, (95% CI) and odds ratios, from the online calculator available at the reputed website, **www.statpages.net**

Results

Demographics (*see Figure 1*)

The overall sample of 100 inpatients consisted of 52 men and 48 women; with ages in the range of 17 to 76 years, with 71% below 45 years. 85% admissions were voluntary, and 15% were involuntary (admitted under the Mental Health Act 2001). 71% were readmissions and 29% were first admissions. This sample size represents about 14% of the annual admissions to the unit (n = 705, in 2007). The sample characteristics are generally consistent with the national level report of year (HRB) 2006.[21]

Twenty two out of 100 (22%), (CI 14-32%) were admitted primarily for the management of substance misuse and dependence and their sequelae, such as; 15 experienced significant suicide risk, seven social crisis or lack of support. There were 14 males and eight females. Of these, the majority 19/22, were under 45 years and 3/22, were over 45 years. While eight experienced their first admission, 14 were in fact re-admissions.

Twenty five (25%, CI 16.9-34.7%) were discovered to have comorbid substance misuse, 16 had alcohol misuse alone, five had other single substance misuse like cannabis, benzodiazepine, while four patients had poly-substance misuse). Their primary diagnosis (n=25) was divided into broad categories as follows:

Depression and/or anxiety, n = 12; psychoses including bipolar mood disorder, n = 5; personality disorders, n = 4, and other disorders n = 4. Fifty-three per cent, (53%) (CI 43-68%) were admitted with a single mental health diagnosis only (no comorbidity). Patient demographics, such as age, sex, first admission/readmission were compared in these two groups *(see Table 1)*.

Overall, more males, 68% (18/25) were identified as having both a mental health diagnosis and comorbid substance misuse, which is statistically significant compared to those males 42% (22/53) who were admitted with a single primary mental health diagnosis only, p < 0.01, OR 3,(CI 1.3-6.8). If we then also consider that 65% (14/22) males were admitted for management of substance misuse (and sequelae) alone, then the total number of male admissions with substance misuse proximal to admission was 68% (32/47), (CI 53-80%).

Based on the previous literature reporting we made the assumption that substance misuse would be more prevalent in the younger age group under 45 years. Indeed, we found in

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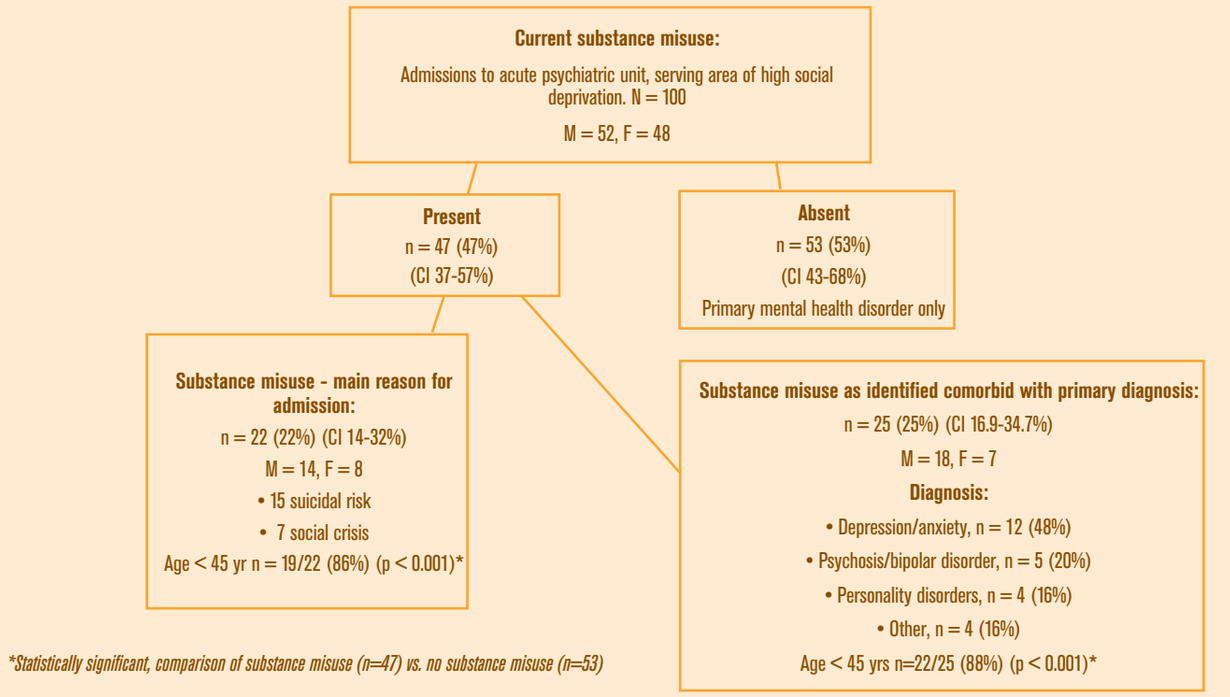
Figure 1: Current substance misuse in admissions to acute psychiatric unit



**Statistically significant, comparison of substance misuse (n=47) vs. no substance misuse (n=53)*

this age group, the majority of individuals who were admitted with comorbid substance misuse who were < 45 years was 88% (22/25) compared to 53% (28/53) of those < 45 years in the group who presented with a single primary mental health diagnosis only. This difference was also statistically significant, p < 0.001, OR 6.1(CI 2.2-16.8).

But additionally, 19/22 individuals were admitted in the substance misuse only group (in the age group under 45 years), so the total number of substance misuse admissions in this younger age group is (22+19/47) 87% (CI 77-97%). Again this finding is consistent with previous studies, reporting a high prevalence of substance misuse in this younger age group population, (less than 45 years).

The mental health disorders found in comorbidity group were; Depression/anxiety 48% (12/25), psychoses, including bipolar mood disorder 20% (5/25), other disorders 16% (4/25), and personality disorders 16% (4/25).

There was no statistical difference found between the three groups regarding whether this was a first admission or readmission. The majority of the sample was in fact readmissions *(Table 1)*.

Discussion

Prevalence

This Irish study reports a very high combined prevalence of 47% (CI 37-57%) of substance misuse identified by screening the clinical notes four days following an admission to the acute psychiatric unit. While the prevalence of primary substance misuse was 22% (CI 14-32%), in addition, the prevalence of comorbidity was discovered to be 25% (CI 16.9-34.7%). The mental health disorders found in the comorbidity group reflected the overall prevalence of admissions in these groups: Depression/anxiety 48% (12/25), psychoses including bipolar mood disorder 20% (5/25), other disorders 16% (4/25), and personality disorders 16% (4/25).

When we examined the demographics of individuals with substance misuse (n = 47) versus the patients where no substance misuse was identified (n = 53), we found that the substance misuse group were more likely to be male than female (p < 0.01, OR 3, CI 1.3-6.8), and aged below 45 years (OR 6.1, CI 2.2-16.8, p< 0.001).

The findings of this study are generally consistent with previous studies, reporting a high prevalence of substance misuse in psychiatric patients.[12-17] The results of our study can not be directly compared to these other studies, as the sample populations and methodologies differ, eg. a large scale UK study reported a high prevalence of 44% comorbidity, in 25% of those who suffered with severe depression and 75% with severe psychotic disorders, but this was based on caseloads of the Community Mental Health Teams (CMHTs) and not a sample of inpatients.[12]

While our study was based on a review of admission case notes, a large scale European study on psychiatric inpatients, (n = 486) found a poor correlation between self reporting and biological measures of alcohol/illicit substance misuse by the individuals.[13]

Screening

Under-recognition of inpatients with substance misuse impairs optimal individual management and under-reporting means that adequate service planning and provision is impaired. It is important to screen all hospital admissions for substance misuse/ dependence. This was an important recommendation made by The Royal College of Physicians (UK), and also by The Royal College of Psychiatrists (UK), to avoid the under detection of substance misuse.[22,23]

UK studies on psychiatric inpatients based on a self-report screening questionnaire, suggest the possibility that the admitting doctor often fails to detect substance misuse and/ or dependence. Hence, it could be argued that our results

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also may reflect a clinically significant underestimate of the prevalence of substance misuse.[11,15]

Burden on the psychiatric services

In spite of the recommendations of the expert group on the mental health policy, a large number of patients 22%, (CI, 14-32%), were admitted to the acute psychiatric unit, primarily for the management of substance misuse and its sequelae; ie. high suicide risk, (15/22) and social crisis/living alone/poor social support, (7/22).[10] This figure appears to be higher than the national average, but we note that the 95% confidence interval (14-32%) overlaps the national average for admissions identified due to alcohol disorders, ie. ~16% plus admissions for the other addictions ~1%.[21]

A dedicated addiction team could potentially provide the appropriate services and therefore reduce acute psychiatric admissions for addiction problems as recommended by *A Vision for Change*.[10] It has been suggested that the generic mental health services and addictions services, often run in parallel and hence a large number of clients have unmet needs for referral and interventions.[12] This study highlights a potential gap in our knowledge of what percentage of patients were referred to addiction services from the group who present with both a primary diagnosis of mental health disorder and substance misuse/ dependence comorbidity.

The evidence would appear to suggest the need for a consultant led specialist addiction service (CMHT) to be provided as part of the geographical catchment area. The high risk groups appear to be males, under 45 years with possibly a background of high social deprivation index.

Reporting

Our study also has implications for reporting of the data at the national level in Ireland. At present, these statistics are prepared by the Health Research Board, Dublin, Ireland and the results that are collated and published are solely based on the feedback of the primary (main) diagnosis of the psychiatric admissions.[21] As we have seen, it is possible that in a high proportion of acute psychiatric inpatients, substance misuse/ dependence is a secondary diagnosis, hence this information would not be reflected in the national level reports.

In fact, the annual electronic returns made to the Health Research Board, by all psychiatric units in Ireland, has the information on both the primary and the secondary diagnoses. Therefore it would be possible to harvest this information for research and service development. The authors wrote to the Health Research Board (HRB) about publishing the information on comorbid substance misuse in psychiatric inpatients, to which the (HRB) reported the difficulty in getting reliable data on secondary diagnoses at the national level, as it is often not reported by clinicians.[24,25]

Although this was a small scale study based in an urban centre, with a population arising from a high index of social deprivation, under the care of two general adult psychiatry (GAP) teams, the results are clinically significant and one can argue, could reflect the prevalence of substance misuse and comorbidity in acute psychiatric inpatient units across Ireland.

Further research is required to examine the prevalence of substance misuse and comorbidity in larger more socially diverse areas. General adult psychiatry (GAP) teams face potential difficulties in the recognition and detection of substance misuse and comorbidity in our in patient populations. Screening is important in order to identify unmet needs and increased reporting may help to develop the appropriate and specific addiction services needed to enhance the management of individuals with mental health disorders and substance misuse. It is also necessary to evaluate further, social deprivation as a potential contributing factor to the prevalence of substance misuse.

Declaration of Interest: None

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